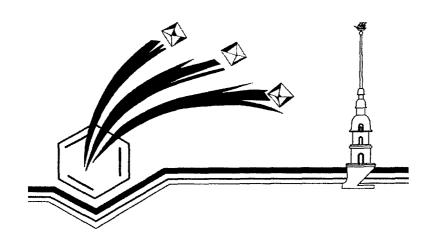
#### Bibliography Index

# Detonation Nanodiamonds and Related Materials



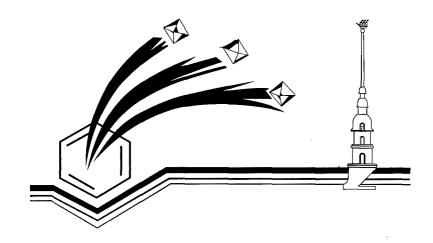
First issue

St.Petersburg 2003

20070504101

#### Bibliography Index

# Detonation Nanodiamonds and Related Materials



First issue

St.Petersburg 2003

APPROVED FOR PUBLIC RELEASE.

GOVERNMENT PURPOSE RIGHTS LICENSE.

The US Government has a non-exclusive license to use these materials for US Government purposes only. All other rights reserved by the copyright holder.

#### Ioffe Physico-Technical Institute Centre for Research and Technology "FIZINTEL"

## Detonation Nanodiamonds and Related Materials

Bibliography Index

First issue

The Bibliography Index is published in the framework of the First International Symposium "Detonation Nanodiamonds: Technology, Properties and Applications"

#### ORGANIZERS OF THE SYMPOSIUM

Ioffe Physico-Technical Institute, St. Petersburg, Russia Institute for Hydrodynamics, Novosibirsk, Russia

St. Petersburg State Institute of Technology (Technical University), St. Petersburg, Russia

Federal State Unitary Enterprise "Electrochimpribor", Russia

Federal State Unitary Enterprise "Special Design and Technological Office "Technolog",

St.Petersburg, Russia

Joint Stock Company "Diamond Centre", St. Petersburg, Russia

Centre for Research and Technology "FIZINTEL", St. Petersburg, Russia

#### SPONSORS OF THE SYMPOSIUM

The Russian Ministry of Industry, Science and Technologies Federal State Unitary Enterprise "Electrochimpribor", Russia Office of Naval Research International Field Office Vision Development Co. Ltd., Tokyo, Japan WOOIN NANOTECH Co. Ltd., Seoul, South Korea.

This work relates to Department of the Navy Grant N00014-03-1-1070 issued by Office of Naval Research International Field Office. The United States Government has a royalty-free license throughout the world in all copyrightable material contained herein.

#### ISBN 5-93634-011-2

Scientific Editors: Alexander Vul'

Valerii Dolmatov Olga Shenderova

Design and layout: Larisa Zaytseva

© Centre for Research and Technology "FIZINTEL", St. Petersburg, Russia

#### Contents

Editorial		v
01.	General articles on nanodiamonds	1
01.01.	Early history (until 1988)	1
01.02.	Reviews	3
01.03.	Monographs	4
01.04.	Proceedings of conferences	4
01.05	Popular science articles	5
02.	Synthesis of nanodiamonds	6
02.01.	Theory of detonation synthesis of nanodiamonds	6
02.02.	Experimental features of detonations synthesis of nanodiamonds	9
02.03.	Methods of post-synthesis treatment (purification of nanodiamonds	
	or selection or isolation of nanodiamonds from detonation carbon)	11
02.04.	Other means of synthesis of nanodiamonds	12
	02.04.01 Shock wave compression of carbon phases	13
	02.04.02. Irradiation of carbon species	14
	02.04.03. Homogeneous formation in a gas phase	14
	02.04.04. Carbide derived (clorination)	15
03.	Models for formation of nanodiamonds	16
03.01.	Carbon phase diagram at the Nanoscale	16
03.02.	Computer simulations of formation of nanodiamonds	16
03.03.	Stability of nanodiamonds	17
03.04	Models of nanodiamond formation by other means than detonation synthesis	18
04.	Physical properties of nanodiamonds	20
04.01.	Structure of nanodiamonds	21
04.02.	Mechanical properties	22
04.03	Phase transitions	23
04.04	Optical properties	24
04.05	Electronic properties	25
05.	Modification of nanodiamond surface	28
05.01	Properties of nanodiamond surface	28
05.02	Chemical modification of surface	30
05.03	Aggregation (assemblies) of nanodiamonds	31
	Aggregation (assembles) of nanodiamonds	٠.
05.04	Suspension of nanodiamonds	31

06.	Experimental methods for investigation of nanodiamonds	33
02.01	X-ray diffraction	33
02.02	Small angle X-ray scattering	33
02.03	Raman scattering	33
02.04	Electron microscopy	34
02.05	Other methods for characterization of nanodiamonds	34
07.	Impurities and structural defects in nanodiamonds	36
08.	Nanodiamond films by CVD	37
09.	Applications of nanodiamonds of detonation synthesis	44
09.01.	Nanodiamonds for seeding at CVD diamond films growth	44
09.02.	Nanodiamonds for electroplating	44
09.03.	Composites based on nanodiamonds	45
09.04.	Antifriction coatings from nanodiamonds	50
09.05.	Nanodiamonds for polishing	51
09.06.	Bioactivity of nanodiamond	52
09.07.	Nanodiamonds as adsorbents	53
09.08.	Other applications	53
10.	Nanographite, carbon onions	
	and other nanodiamond-derived materials	56
	Nanographite and low-dimensional carbon	56
10.02.	Carbon onions	58
11.	Diamond Nanorods	62
12.	Nanodiamonds in Nature	63
13.	Inventions and Patents	66
14.	Companies and Centers producing nanodiamond of detonation synthesis (websites)	71
15.	Scientific groups working in area of detonation nanodiamond (websites or/and e-mail addresses )	73
Source	Index	79
Author	· Index	82

#### Editorial

The Bibliography Index 'Nanodiamonds and Related Materials' was prepared for the First International Symposium on 'Detonation Nanodiamonds: Technology, Properties and Applications'. It seemed important to us to introduce the Symposium participants to most of the recent publications, since the studies in the area of nanotechnologies - nanoelectronics, nanobioengineering and nanomaterials - are gaining greater importance in the modern world. A key position among nanomaterials belongs to nanocarbon clusters, such as fullerenes, nanotubes and carbon onions discovered at the end of the 20th century.

Most of the papers included in the Bibliography are on detonation nanodiamonds. Two papers published in the Russian journal 'Reports of the Academy of Sciences' and in 'Nature' in 1988 are the most widely cited ones, so they are chosen as a zero point for the selection of publications. But we also included a short list of papers published before that date for the sake of historical reference.

To compile the Bibliography, we used our own data base and those of some other researchers: F. Banhart, P. Belobrov, D. Gruen, S.K. Gordeev, G. Galli, G.V. Sakovich, A.P. Voznyakovskii, V.L. Kuznetsov, I.I. Kulakova, whose assistance we would like to acknowledge here. We also used the references in the book 'Detonation Nanodiamonds' by A.L. Vereschagin.

The publications on each topic are presented in a chronological sequence and in the alphabetic order within each year. One of the difficulties we faced was that many reports are only in Russian, and we could not find an English translation of the particular journals. So we gave only their titles in English with the Latin transcription of both the titles and the authors' names.

The Index is concluded with a list of organizations and research groups involved in nanodiamond technologies, which may promote international cooperation within this community.

The Index compilers are very grateful to the members of the Ioffe Physico-Technical Institute Drs. Vladimir Osipov, Svetlana Vul', and Ph.D student Zoya Tsareva for their invaluable help. We especially appreciate the work on the computer preparation of the Index by Larisa Zaytseva.

Because of the too short period of time allotted for compiling the Bibliography Index, the Editors are aware that it should have certain drawbacks and can hardly satisfy all researchers working on nanodiamonds. But if a second edition becomes necessary in the future, we will appreciate any comments and recommendations for its improvement.

#### Editors:

Alexander Vul', Valerii Dolmatov, Olga Shenderova.

#### 01. General articles on nanodiamonds

#### > 01.01. Early history (until 1988)

- 001 Are small diamond thermodynamically stable in the interstellar medium. Nuth J.A. Astrophys. Space Sci. 1987. Vol. 139, No. 1, P.103-109.
- 002 Carbon clustering in detonations. **Shaw M.S., Johnson J.D.** *J. Appl. Phys.* 1987. Vol. 62, No. 5, P. 2080-2085.
- 1003 Intersteller diamond in meteorites. Lewis R.S., Tang M., Wacker J.G., Anders E., Steel E. Nature. 1987. Vol. 326, P. 160-162.
- 004 Melting of carbon at 50 to 300 kbar. Weathers M.S., Bassett W.A. Phys. Chem. Minerals. 1987. Vol. 15, P. 105-112.
- Meteorite diamonds. Lewis R.S., Ming T., Wacker J.F., Anders E., Steel E. Nature. 1987. Vol. 326, P. 160.
- Oo6 Small-particle physics and interstellar diamond. Nuth J.A. III. Nature. 1987. Vol. 329, P. 589.
- 007 Theoretical methods and results for electronic structure calculations on very large systems: carbon clusters. Almlof J., Luthi H.P. Supercomputer Research in Chemistry and Chemical Engineering, ACS Symposium, ASC, 1987.
- 008 The temperature of detonation products in the chamber. Ershov A.P., Kupershtokh A.L. Fiz. Goren. Vzryva. 1986. Vol. 22, No. 3, P. 118-122. (in Russian) // О температуре продуктов детонации при взрыве в камере. Ершов А.П., Куперштох А.Л. Физика горения и взрыва. 1986. Т. 22, № 3, С. 118-122.
- 009 A study of detonation transformation of condenced explosives by electroconductivity methods. Staver A.M., Ershov A.P., Lyamkin A.I. Fiz. Goren. Vzryva. 1984. Vol. 20, No. 3, P. 79-82 (in Russian). // Исследование детонационного превращения конденсированных взрывчатых веществ методом электропроводности. Ставер А.М., Ершов А.П., Лямкин А.И. Физика горения и взрыва. 1984. Т. 20, № 3, С. 79-82.
- On the crystalline structure of detonation diamond. **Kurdyumov A.V.**, **Breusov O.N.**, **Drobishev.V.N.**, **Mel'nikov V.A.**, **Tatsii V.F.** *Fiz. Goren. Vzryva.* 1984.Vol. 25, No. 3, P. 126-128 (in Russian). // О кристаллической структуре алмазов детонационного синтеза. **Курдюмов А.В.**, **Бреусов О.Н.**, **Дробышев В.Н.**, **Мельников В.А.**, **Таций В.Ф.** *Физика горения и взрыва.* 1984. Т. 25, № 3, С. 126-128.
- O11 Phase diagram of carbon and the possibility of obtaining diamond at low pressures. Chaikovskii E.F., Rozenberg G.Kh. Soviet Physics Doklady. 1984. Vol. 29, No. 12, P. 1043-1044. // Translation from: Dokl. Akad. Nauk USSR 1984. Vol. 279, No. 4-6, P. 1372-1375.

- O12 Soot derived from the detonation of a trinitrotoluene charge. Nomura Y., Kawamura K. Carbon. 1984. Vol. 22. P. 189-191.
- 013 Ultradisperse diamond powders produced by explosion. Staver A.M., Lyamkin A.I., Gubareva N.A., Petrov E.A. Fiz. Goren. Vzryva. 1984. Vol. 20, No. 5. P. 100-103. (in Russian) // Ультрадисперсные алмазные порошки, полученные с использованием энергии взрыва. Ставер А.М., Лямкин А.И., Губарева Н.А., Петров Е.А. Физика горения и взрыва. 1984. Т. 20, № 5. С. 100-103.
- 014 Detonation synthesis of superhard materials. **Drobishev V.N.** Fiz. Goren. Vzryva. 1983. Vol. 19, No. 5. P. 158-160. (in Russian) // Детонационный синтез сверхтвердых материалов. Дробышев В.Н. Физика горения и взрыва. 1983. Т. 19, № 5. С. 158-160.
- Epitaxial diamond growth from methanc on ultradisperse diamond produced by high temperature compression. Tesner P.A., Trefilov V.I., Savvakin G.I., Borodina L.M. Dokl. Akad. Nauk USSR. Vol. 273, No. 6. P. 1431-1432. (in Russian) // Эпитаксиальный рост алмаза из метана на ультрадисперсном алмазе, полученном из газовой фазы при высокотемпературном сжатии. Теснер П.А., Трефилов В.И., Саввакин Г.И., Бородина Л.М. Докл. АН СССР. 1983. Т. 273, № 6. С. 1431-1432.
- 016 Production of diamond and boron nitride by internal explosion. Yamaguchi S. International Seminar "Superhard materials: synthesis, properties, applications", June 16-21, 1981, Kiev, 1983. P. 55-57 (in Russian). // Получение алмаза и нитрида бора методом внутреннего взрыва. Ямагучи С. Международный семинар "Сверхтвердые материалы: синтез, свойства, применение". 16-21 июня 1981, Киев, 1983. С. 55-57.
- O17 Diamonds produced by detonation. Adadurov G.A., Breusov O.N., Drobyshev V.N., Rogacheva A.I., Tatsii V.F. Fizika Impulsnih Davlenyij. Tr. 44 (74), M. VNII fiz.-teh. i radiotehn. izmerenii. 1979, No. 4. P. 157-161. (in Russian) // Алмазы, получаемые взрывом. Ададуров Г.А., Бреусов О.Н., Дробышев В.Н., Рогачева А.И., Таций В.Ф. Физика импульсных давлений. тр. 44 (74) М. ВНИИ физ.-техн. и радиотехнических измерений. 1979. № 4. С. 157-161.
- The structure of ultradisperse diamond prodused by high-temperature explosion. Trefilov V.I., Savvakin G.I., Skorohod V.V., Solonin Y.M., Hrienko A.F. Dokl. Akad. Nauk USSR. 1978. Vol. 239, No. 4. P. 838-841. (in Russian) // Особенности структуры ультрадиспереных алмазов, полученных высокотемпературным синтезом в условиях взрыва. Трефилов В.И., Саввакин Г.И., Скороход В.В., Солонин Ю М., Хриенко А.Ф. Докл. АН СССР. 1978. Т. 239, № 4. С. 838-841.
- 019 Electron-spin-resonance spectra of diamonds synthesized in a metal-carbon medium by static and dynamic (explosive) methods. Andreev V.D., Nachal'naya T.A., Shul'man L.A. Soviet Physics Crystallography. 1977. Vol. 22, No. 1, P. 113.

- 020 The electroconductivity band in detonation of condenced explosives. Antipenko A.G., Dryomin A.N., Yakushev V.V. Dokl. Akad. Nauk USSR. 1975. Vol. 225, No. 5, P. 1086-1088 (in Russian). // О зоне электропроводности при детонации конденсированных взрывчатых веществ. Антипенко А.Г., Дрёмин А.Н., Якушев В.В. Докл. АН СССР. 1975. Т. 225, № 5, С. 1086-1088.
- 021 On artificial diamond. **Leypunskiy O.I.** *Usp. Khim.* 1939. Vol. 8, No. 10, P. 1520-1543 (in Russian). // Об искусственных алмазах. **Лейпунский О.И.** *Успехи химии.* 1939. Т. 8, № 10, С. 1520-1534.

#### > 01.02. Reviews

- 022 Carbon nanostructures. Shenderova O.A., Zhirnov V.V., Brenner D.W. Critic. Rev. Sol. State Mater. Sci. 2002. Vol. 27, No. 3-4, P. 227-356.
- 023 Detonation synthesis ultradispersed diamonds: properties and applications. Dolmatov V.Yu. Rus. Chem. Rev. 2001. Vol. 70, No. 7, P. 607-626.
- 024 Nanodiamonds. **Dolmatov V.Yu., Fujimura T.** Superhard Materials. 2001. No. 6. P. 31-37. // Наноалмазы. Долматов В.Ю., Фуджимура Т. Сверхтвердые материалы. 2001. № 6. C. 34-41.
- 025 Nanocrystalline diamond films. Gruen D.M. Annu. Rev. Mater. Sci. 1999. Vol. 29, P. 211-259.
- Detonation and shock synthesis of nanodiamonds. Donnet J.-B., Lemoigne C., Wang T.K., Peng C.-M., Samirant M., Eckhardt A. Bull. Soc. Chem. Fr. 1997. Vol. 134. No. 10-11, P. 875-890.
- 027 New type of artificial diamonds and physical-chemical fundumentals of their creation. Sakovich G.V, Petrov E.A., Komarov V.F., Kozyrev N.V. Conversion Concepts for Commercial Applications and Disposal Technologies of Energetic Systems. NATO ASI Series, Ed. Krause H. Amsterdam, Kluwer Academic Publ., 1997. P. 55-72.
- 028 Chemical diamond synthesis. Aspects of general theory. Rudenko A.P., Kulakova I.I., Skvortsova V.L. Rus. Chem. Rev. 1993. Vol. 62, No. 2, P. 87.
- Production of ultradisperse diamond from explosives. Staver A.M., Lyamkin A.I. Ultradisperse materials: synthesis and properties, Krasnoyarsk, 1990. Р. 3-22 (in Russian). // Получение ультрадисперсных алмазов из взрывчатых веществ. Ставер А.М., Лямкин А.И. Ультрадисперсные материалы. Получение и свойства. Красноярск: 1990. С. 3-22.
- 030 Progress in the physics and chemistry of energy-saturable media. Tananaev I.V., Fedorov V.B., Kalashnikov E.G. Usp. Khim. 1987. Vol. 56, No 2, P. 193-215 (in Russian). // Успехи физико-химии энергонасыщенных сред. Тананаев И.В., Федоров В.Б., Калашников Е.Г. Успехи химии. 1987. Т. 56, № 2, С. 193-215.

#### > 01.03. Monographs

- 031 Ultradisperse diamonds of detonation synthesis: production, properties and applications. Dolmatov V.Yu. Publisher: St. Petersburg, Politechnical university. 2003.
- 032 Detonation nanodiamonds. Vereshchagin A.L. Altai State Technical University, Barnaul, Russian Federation, 2001 (in Russian). // Детонационные наноалмазы. Верещагин А.Л. Барнаул, 2001 г. Издательство Алтайского государственного технического университета ISBN 5-9257-0012-0.
- 033 Nanostructured carbon for advanced applications. Eds.: Benedek G., Milani P., Ralchenko V.G. NATO Science Series Vol. 24. Kluwer Academic Publ., 2001.
- 034 New carbons. Inagaki M. Elsevier: 2000.
- O35 Carbyne and carbynoid structures. Ed. by Heimann R.B., Evsyukov S.E., Kavan L. Kluwer Academic Publ., 1999.
- 036 The physics and chemistry of ultradisperse systems. Ed. Morohov I.D. Moscow: Nauka, 1987. 342 р. // Физико-химия ультрадисперсных систем. под ред. Морохова И.Д. М.: Наука, 1987. 342 с.
- 037 Clusters and small particles. **Petrov Y.I.** Moscow: Nauka, 1986. 368 р. // Кластеры и малые частицы. **Петров Ю.И.** М.: Наука, 1986. 368 с.
- O38 Physical phenomena in ultradisperse media. Morohov I.D., Trusov L.I., Lapovok V.N. Moscow: Energyatomizdat, 1984. 224 р. // Физические явления в ультрадисперсных средах. Морохов И.Д., Трусов Л.И., Лаповок В.Н. М.: Энергоатомиздат, 1984. 224 с.

#### > 01.04. Proceedings of conferences

- The Proceedings of the 5<sup>th</sup> All-Russian Conference "The Physics and Chemistry of Ultradisperse System", Moscow, Moscow Physical-Engineering Institute, 2000. (in Russian). // Сборник научных трудов 5-ой Всероссийской конференции по физикохимии ультрадисперсных систем. Москва, МИФИ, 2000.
- The Proceedings of the 4<sup>th</sup> All-Russian Conference "The Physics and Chemistry of Ultradisperse System", Moscow, Moscow Physical-Engineering Institute, 1999 (in Russian). // Сборник научных трудов 4-ой Всероссийской конференции по физикохимии ультрадисперсных систем. Москва, МИФИ, 1999.
- 041 The Proceedings of a Seminar on Nanosize Diamonds. Institute for Superhard Materials. Superhard Materials. 1998. No. 4, P. 3-95. // Труды научного семинара Институга сверхтвердых материалов по нанометрическим алмазам. Сверхтвердые материалы. 1998. № 4, C. 3-95.

O42 Collection of Reports of the 5<sup>th</sup> All-Union Meeting on Detonation. Krasnoyarsk, State Technical University, Russia, August 5-12, 1991 (in Russian). // Сборник докладов 5-ого Всесоюзного совещания по детонации. Красноярск, 5-12 августа 1991 года, в двух томах, 379 с.

See also 096, 189, 213, 230, 262, 407, 410, 411, 417, 456, 491, 572

#### > 01.05 Popular science articles

- 043 Three dialogs in "Karpovka", *Chemistry and Life.* 1999. No. 1, P. 14-16 (in Russian). // Три беседы в "Карповке" *Химия и жизнь.* 1999. № 1, P. 14-16. (about work of Koscheev A. on nanodiamond).
- 044 Turning onions into diamonds. Schewe P.F., Stein B. Bull. Phys. News. 1997. Vol. 340, P. 173-180.

See also 024, 481, 586, 591, 598

#### 0.2. Synthesis of nanodiamonds

- O45 Synthesis, properties, application, and production of nanometric diamonds. Part 1. Synthesis and properties. Sakovich G.V., Komarov V.F., Petrov E.A. Superhard Materials. 2002. No. 3, P. 1-15. // Синтез, свойства, применение и производство наноразмерных синтетических алмазов. Часть 1. Синтез и свойства Сакович Г.В., Комаров В.Ф., Петров Е.А. Сверхтвердые материалы. 2002. № 3, С. 3-18.
- O46 Synthesis, properties, application, and production of nanometric diamonds. Part 2. Application and production. Sakovich G.V., Komarov V.F., Petrov E.A. Superhard Materials. 2002. No. 4, P. 7-21. // Синтез, свойства, применение и производство наноразмерных синтетических алмазов. Часть 2. Применение и производство. Сакович Г.В., Комаров В.Ф., Петров Е.А. Сверхтвердые материалы. 2002. № 4, C. 8-23.

#### > 02.01. Theory of detonation synthesis of nanodiamonds

- O47 Carbon cluster coagulation and fragmentation kinetics in shocked hydrocarbons. Viecelli A., Glosli J.N. J. Chem. Phys. 2002. Vol. 117, P. 11352-11358
- 048 Liquid-liquid phase transition in elemental carbon: a first-principles investigation. Wu C.J., Glosli J., Galli G., Ree F. Phys. Rev. Lett. 2002. Vol. 89, P. 135701.
- 049 Phase transformations of nanometer size carbon particles in shocked hydrocarbons and explosives. Viecelli J.A., Bastea S., Glosli J.N., Ree F.H. J. Chem. Phys. 2001. Vol. 115, P. 2730-2736.
- O50 Carbon particle phase transformation kinetics in detonation waves. Viecelli J., Ree F.H. J. Appl. Phys. 2000. Vol. 88. P. 683-690.
- 051 Mathematical modeling of the synthesis of superhard materials by detonation waves. Molokeev V.A., Titarenko Y.I. Issledovaniya po ballistike i smezhnym voprosam. Tomsk: 1997. P. 95-99. // Использование математического моделирования в задачах синтеза сверхтвердых материалов в детонационной волне. Молокеев В.А., Титаренко Ю.И. Исследования по баллистике и смежным вопросам. Томск: 1997. C. 95-99.
- On the mechanism of ultradisperse diamond detonation synthesis and the ambient dependence of its yield. Babyshkin Y.A., Lyamkin A.I., Chiganova V.A. Ul'tradispersnye poroshki, nanostruktury, materialy. Krasnoyarsk: Izd. KGTU. 1996. P. 10-15. (in Russian). // О механизме образования ультрадисперсного алмаза при детонационном синтезе и зависимости его выхода от внешних условий. Бабушкин Ю.А., Лямкин А.И., Чиганова В.А. Ультрадисперсные порошки, наноструктуры, материалы. Красноярск: Изд. КГТУ, 1996. С. 10-15.

- 053 Formation time estimation of the corresponding carbon liquid droplets of ultrafine diamond. **Zhou G., Jun S., Huang F., Ding J.** HDPIV: 4<sup>th</sup> Symp. Int. Comport Mileux denses hautes pressions dyn., Tours, 5-9 Juin 1995. Paris. 1995. P. 319-325.
- 054 The temperature effect on the growth of ultradisperse diamonds at the detonation wave front. Anisichkin V.F., Dolgushin D.S., Petrov E.A. Fiz. Goren. Vzryva. 1995. Vol. 31, No. 1, C. 109-112. (in Russian) // Влияние температуры на процесс роста ультрадисперсных алмазов во фронте детонационной волны. Анисичкин В.Ф., Долгушин Д.С., Петров Е.А. Физика горения и взрыва. 1995. Т. 31, № 1, С. 109-112.
- O55 On the mechanism of carbon release in the detonation decomposition of substances. Anisichkin V.F. Fiz. Goren. Vzryva. 1994. Vol. 30, No. 5, C. 100-106. (in Russian) // О механизме выделения углерода при детонационном разложении веществ. Анисичкин В.Ф. Физика горения и взрыва. 1994. Т. 30, No. 5, C. 100-106.
- 056 The effect of the explosive molecule structure on the production rate, output and properties ultradispersed diamond. **Pershin S.V., Petrov E.A., Tsaplin D.N.** *Fiz. Goren. Vzryva.* 1994. Vol. 30, No. 2, P. 102-106. // Влияние структуры молекулы взрывчатых веществ на скорость образования, выход и свойства ультрадисперсных алмазов. **Першин С.В., Петров Е.А., Цаплин** Д.**Н.** *Физика горения и взрыва.* 1994. Т. 30. № 2, С. 102-106.
- 057 Very small spherical crystals of distorted diamond found in detonation product of explosive/graphite mixture and their formation mechanism. Yamada K., Sawaoka A.B. Carbon. 1994. Vol. 32, No. 4, P. 665-673.
- 058 Diamond formation from liquid carbon. Mal'kov I.Y., Filatov L.I., Titov V.M., Litvinov B.V., Chuvilin A.L., Teslenko A.S. Fiz. Goren. Vzryva. 1993. Vol. 27, No. 2, P. 131-134 (in Russian). // Образование алмаза из жидкой фазы углерода. Мальков И.Ю., Филатов Л.И., Титов В.М., Литвинов Б.В., Чувилин А.Л., Тесленко А.С. Физика горения и взрыва. 1993. Т. 27, № 2, С. 131-134.
- 059 Formation of diamond from liquid carbon. Mal'kov I.Y., Filatov L.I., Titov V.M. et al. Fiz. Goren. Vzryva. 1993. Vol. 29, No. 4, P. 131-134 (in Russian).
- 060 Diamond melting and liquid carbon. Galli G. Phys. Scripta. 1992. Vol. 39, P. 148.
- 061 The influence of scale factors on the size and yield of diamond in detonation synthesis. Vyskubenko B.A., Danilenko V.V., Lin E.E., Mazanov V.A., Serova T.V., Suharenko V.I., Tolochko A.P. Fiz. Goren. Vzryva. 1992. Vol. 28, No. 2, P.108-109 (in Russian). // Влияние масштабных факторов на размеры и выход алмазов при детонационном синтезе. Выскубенко Б.А., Даниленко В.В., Лин Э.Э., Мазанов В.А., Серова Т.В., Сухаренко В.И., Толочко А.П. Физика горения и взрыва. 1992. Т. 28, No. 2, С. 08-109.

- 062 On diamond formation in detonation of picric acid. **Pershin S.V.**, **Tsaplin D.N.**, **Dryomin A.N.**, **Antipenko A.G.** *Fiz. Goren. Vzryva.* 1991. Vol. 27, No. 4, P. 117-121 (in Russian). // О возможности образования алмаза при детонации пикриновой кислоты. **Першин С.В.**, **Цаплин** Д.Н., **Дремин А.Н.**, **Антипенко А.Г.** Физика горения и взрыва. 1991. Т. 27, № 4, С. 117-121.
- Diamond synthesis from detonation carbon. Volkov K.V., Danilenko V.V., Elin V.I. Fiz. Goren. Vzryva. 1990. Vol. 26, No. 3, P. 123-125 (in Russian). // Синтез алмаза из углерода продуктов детонации. Волков К.В., Даниленко В.В., Елин В.И. Физика горения и взрыва. 1990. Т. 26, № 3, С. 123-125.
- On detonation synthesis of artificial diamonds. **Bushman A.V., Vorobyev V.S., Rahel' A.D., Fortov V.E.** Dokl. Akad. Nauk USSR. 1990. Vol. 315, No 5, P. 1124-1126 (in Russian). // О возможности электровзрывного синтеза искусственных алмазов. **Бушман А.В., Воробьев В.С., Рахель А.Д., Фортов В.Е.** Докл. АН СССР. 1990. Т. 315, № 5, С. 1124-1126.
- O65 Synthesis of diamond from the carbon in the detonation products of explosive. Volkov K.V., Danilenko V.V., Elin V.N. Combust. Explos. Shock Waves. 1990. Vol. 26, No. 3, P. 366-369.
- 066 The conservation of diamonds in detonation synthesis. **Petrov E.A.**, **Sakovich G.V.**, **Brylyakov P.M.** *Dokl. Akad. Nauk USSR*.1990.Vol. 313, No. 4, P. 862-864 (in Russian). // Условия сохранения алмазов в процессе детонационного получения. **Петров Е.А.**, **Сакович Г.В.**, **Брыляков П.М.** *Докл. АН СССР*. 1990. Т. 313, № 4, С. 862-864.
- 067 Influence of the shape and size of graphite and diamond crystalls on the phase equilibrium and detonation parameters. Gubin S.A., Odintsov V.V., Pepekin V.I., Sergeev S.S. Khim. Fiz. 1990. Vol. 9, No. 3, P. 401-417 (in Russian). // Влияние формы и размеров кристаллов графита и алмаза на фазовое равновесие углерода и параметры детонации. Губин С.А., Одинцов В.В., Пепекин В.И., Сергеев С.С. Хим. физика. 1990. Т. 9, № 3, С. 401-417.
- 068 The study of ultradisperse diamond synthesis by an isotropic method. Kozyrev N.V., Sakovich G.V., Sen C.S., Shtejn M.S. Dokl. Akad. Nauk USSR. 1990.Vol. 314, No. 4, P. 889-891 (in Russian). // Исследование процесса синтеза ультрадисперсных алмазов методом меченых атомов. Козырев Н.В., Брыляков П.М., Сакович Г.В., Сен Ч.С., Штейн М.С. Докл. АН СССР. 1990. Т. 314, № 4, С. 889-891.
- A study of ultradispersed diamond sunthesis by detonation waves. Titov V.M., Anisichkin V.F., Mal'kov Y.F. Fiz. Goren. Vzryva. 1989. Vol. 25, No. 3. P. 117-126 (in Russian). // Исследование процесса синтеза ультрадисперсного алмаза в детонационных волнах. Титов В.М, Анисичкин В.Ф, Мальков И.Ю. Физика горения и взрыва. 1989. Т. 25, № 3, С. 117-126. (also 02.02)

- 070 Production of diamonds from explosives. Lyamkin A.I., Petrov E.A, Ershov A.P., Sakovich G.V., Staver A.M., Titov V.M. Dokl. Akad. Nauk USSR. 1988. Vol. 302, No. 3, P. 611-613. // Получение алмазов из взрывчатых веществ. Лямкин А.И., Петров Е.А., Ершов А.П., Сакович Г.В., Ставер А.М., Титов В.М. Докл. АН СССР. 1988. Т. 302, № 3, С. 611-613.
- 071 Diamonds in detonation soot. Greiner N.R., Philips D.S., Johnson J.D., Volk F. Nature. 1988. Vol. 333. P. 440-442.

See also 008, 020, 129, 208, 315

### > 02.02. Experimental features of detonations synthesis of nanodiamonds

- O72 Dynamic synthesis of diamonds. Donnet J.B., Fousson E., Wang T.K., Samirant M., Baras C., Pontier Johnson M. Diamond Relat. Mater. 2000. Vol. 9, No. 3-6, P. 887-892.
- 073 A commercial system for production of ultradispersed diamonds. Gubarevich T.M., Korzhenevskii A.P., Gamanovich D.N. Superhard Materials. 1998. No. 4, P. 14-19. // Промышленный комплекс по производству ультрадисперсных алмазов. Губаревич Т.М., Корженевский А.П., Гаманович Д.Н. Сверхтвердые материалы. 1998. № 4. С. 17-22.
- 074 Ammunition for diamonds. **Dolmatov V.Y., Zhirkevich V.Y., Postnov V.N.** *Dvoinie Tehnologii.* 1998. No. 3, P. 71-78 (in Russian). // Боеприпасы для алмазов. Долматов В.Ю., Жиркевич В.Ю., Постнов В.Н. Двойные технологии. 1998. № 3, P. 71-78.
- 075 Possible doping of ultradispersed diamond in detonation wave. Lin E.E., Dubitsky G.A., Zyulkova T.V., Mazanov V.A., Sirenko A.V., Sukharenko V.I. Russian Chem. Phys. 1997. Vol. 16, No. 3, P. 142-143.
- O76 Synthesis of nanodiamond via explosives and shock waves Donnet J.B., Lemoigne C., Wang T.K., Peng C.M., Samirant M., Eckhardt A. Bull. Soc. Chem. Fr. 1997. Vol. 134, P. 875-890.
- 077 The effect of the size and structure of carbon particle on the threshold shockwave pressure in diamond production. **Pershin S.V., Tsaplin D.N., Dremin A.N., Ananiyan A.V.** *Khim. Fiz.* 1996. Vol. 15, No. 6, P. 113-120 (in Russian). // Влияние размера и структуры частиц углерода на пороговое давление образования алмаза в детонационной волне. **Першин С.В., Цаплин Д.Н., Дремин А.Н., Ананьян А.В.** *Химическая физика.* 1996. Т. 15, № 6, С. 113-120.

- 078 Carbon coagulation in nonstationary flow of detonation products. **Mal'kov Yu.I.** Fiz. Goren. Vzryva. 1994. Vol. 30, No. 5, C. 155-157 (in Russian). // Коагуляция углерода в условиях нестационарных течений продуктов детонации. **Мальков Ю.И.** Физика горения и взрыва. 1994. Т. 30, № 5, С. 155-157.
- 079 Effect of explosion conditions on the structure of detonation soots: ultradisperse diamonds and onion carbon. Kuznetsov V.L., Malkov I.Yu., Chuvilin A.L., Moroz E.M., Kolomiichuk V.N., Shaichutdinov Sh.K., Butenko Yu.V. Carbon. 1994. Vol. 32, P. 873-882.
- 080 Synthesis of ultradisperse diamond by detonation of a blend charge. Kolomijchuk V.N., Mal'kov I.Yu. Fiz. Goren. Vzryva. 1993. Vol. 29, No. 1, C. 120-128 (in Russian). // Исследование синтеза ультрадисперсной алмазной фазы в условиях детонации смесевых зарядов. Коломийчук В.Н., Мальков И.Ю. Физика горения и взрыва. 1993. Т. 29, № 1, С. 120-128.
- O81 A study of ultradisperse diamond synthesis from a mixture.of trinitrotoluene, hexogen, octogen and tenom. Kozyrev N.V., Golubeva E.S. Fiz. Goren. Vzryva. 1992. Vol. 28, No. 5, P.119-123. // Исследование процесса синтеза ультрадисперсных алмазов из смесей тротила с гексогеном, октогеном и тэном. Козырев Н.В., Голубева Е.С. // Физика горения и взрыва. 1992. Т. 28, No. 5, C. 119-123.
- 082 Estimation of the shape and size of diamond crystallites behind the shock-wave in condensed explosives. Odintsov V.V. Gubin S.A., PepekinV.I., Akimova L.N. Khim. Fiz. 1991. Vol. 10, No. 5, P. 687-695 (in Russian). // Определение формы и размера кристаллов алмаза за детонационной волной в конденсированных средах. Одинцов В.В., Губин С.А., Пепекин В.И., Акимова Л.Н. Хим.физика. 1991. Т. 10, № 5, С. 687-695.
- 083 The formation of the ultradisperse diamond phase of carbon by detonation of heterogeneous mixtures of octagen and organic liquids. Mal'kov Yu.I. Fiz. Goren. Vzryva. 1991. Vol. 27, No. 5, P. 136-140 (in Russian). // Образование ультрадисперсной алмазной фазы углерода в условиях детонации гетерогенных смесей, состоящих из октогена и жидкой органической добавки. Физика горения и взрыва. Мальков Ю.И. 1991. Т. 27, № 5, С. 136-140.
- Diamond synthesis from the carbon of explosion products. Volkov K.V., Danilenko V.V., Elin V.I. Fiz. Goren. Vzryva. 1990. Vol. 26, No. 3, P. 123-125 (in Russian). // Синтез алмаза из углерода продуктов детонации. Волков К.В., Даниленко В.В., Елин В.И. Физика горения и взрыва. 1990. Т. 26, № 3, С. 123-125.

- Production of diamond clusters by explosion and their application. Sakovich G.V., Brylyakov P.M., Verestchagin A.L., Komarov V.F., Gubarevich V.D. Zhyrnal Vses. Khim. Obschestva. 1990. Vol. 35, No. 5, P. 600-602 (in Russian). // Получение алмазных кластеров взрывом и их практическое применение. Сакович Г.В, Брыляков П.М., Верещагин А.Л., Комаров В.Ф., Губаревич В.Д. Журнал Всесоюзного химического общества. 1990. Т. 35, № 5, С. 600-602.
- On the abrupt change in the detonation rate dependence on the initial density trinitrotoluene. **Dryomin A.N., Pershin S.V., Pyaternev S.V., Tsaplin D.N.** Fiz. Goren. Vzryva. 1989. Vol. 25, No. 5, P. 141-143 (in Russian). // Об изломе зависимости скорости детонации от начальной плотности ТНТ. Дремин А.Н., Першин С.В., Пятернев С.В., Цаплин Д.Н. Физика горения и взрыва. 1989. Т. 25, № 5, С. 141-143.
- 087 An isotropic of decomposition in a detonation wave. Anisichkin V.F., Derendyaev B.G., Koptyug V.A., Mal'kov Yu.I., Salahutdinov N.F., Titov V.M. Fiz. Goren. Vzryva. 1988. Vol. 24, No. 3, P. 121-122 (in Russian). // Исследование процесса разложения в детонационной волне изотопным методом. Анисичкин В.Ф., Дерендяев Б.Г., Коптюг В.А., Мальков Ю.И., Салахутдинов Н.Ф., Титов В.М. Физика горения и взрыва. 1988. Т. 24. № 3, С. 121-122.
- 088 Diamond synthesis in dynamic loading of organic substansis. AnisichkinV.F., Mal'kov I.Y., Titov V.M. Dokl. Akad. Nauk USSR. 1988. Vol. 303, No. 3, P. 625-627 (in Russian). // Синтез алмаза при динамическом нагружении органических веществ. Анисичкин В.Ф., Мальков И.Ю., Титов В.М. Докл. АН СССР. 1988. Т. 303, № 3, С. 625-627.

See also 009, 012, 014, 018, 019, 026, 029, 052, 054, 056, 059, 061, 063, 065, 066, 070, 071, 536, 608, 620

- 02.03. Methods of post-synthesis treatment (purification of nanodiamonds or selection or isolation of nanodiamonds from detonation carbon)
- 089 Formation of physicochemical properties of nanodiamond dispersions in the course of their recovery and purification. Bogatyreva G.P., Marinich M.A., Bazaly G.A., Oleinik N.A., Gvyazdovskaya V.L., Shamraeva V.S. Superhard Materials. 2002. No. 6. // Формирование физико-химических свойств наноалмазных дисперсий в процессе их извлечения и очистки. Богатырева Г.П., Маринич М.А., Базалий Г.А., Олейник Н.А., Гвяздовская В.Л., Шамраева В.С. Сверхтвердые материалы. 2002. № 6, С. 28-36.

See also **073**, **248**, **605**, **613**, **614**, **617**, **623**, **624**, **626**, **628**, **632**, **633**, **635**, **636**, **637**, **638** 

#### > 02.04. Other means of synthesis of nanodiamonds

- 090 Isolation and structure of higher diamondoids, nanometer-sized diamond molecules. Dahl J.E., Liu S.G., Carlson R.M.K. Science. 2003. Vol. 299, No. 5603, P. 96-99.
- 091 Manipulation of the equilibrium between diamond growth and renucleation to form a nanodiamond/amorphous carbon composite. Zhou X.T., Li Q., Meng F.Y., Bello I., Lee C.S., Lee S.T., Lifshitz Y. Appl. Phys. Lett. 2002. Vol. 80, No. 18, P. 3307-3309.
- O92 Carbon diffusion and nanocrystalline diamond formation in carbon ionimplanted oxides studied by nuclear elastic scattering. Orwa J.O., Jamieson D.N., Prawer S., McCallum J.C. Nucl. Instrum. Methods. 2001. Vol. 175-177. P. 554-558.
- 093 Diamond nanocrystals formed by direct implantation of fused silica with carbon. Orwa J.O., Prawer S., Jamieson D.N., Peng J.L., McCallum J.C., Nugent K.W., Li Y.J., Bursill L.A., Withrow S.P. J. Appl. Phys. 2001. Vol. 90, No. 6, P. 3007-3018.
- O94 Synthesis of diamond from carbon nanotubes under high pressure and high temperature. Cao L.M., Gao C.X., Sun H.P., Zou G.T., Zhang Z., Zhang X.Y., He M., Zhang M., Li Y.C., Zhang J., Dai D.Y., Sun L.L., Wang W.K. Carbon. 2001. Vol. 39, No. 2. P. 311-314.
- O95 Ion beam synthesis of graphite and diamond in silicon carbide. Heera V., Skorupa W., Pecz B., Dobos L. Appl. Phys. Lett. 2000. Vol. 76, No. 20, P. 2847-2849.
- O96 The chemical analysis of diamond and its metastability. Kulakova I., Rudenko A.P. Proceedings of the 4-th International Symposium on Diamond Films and Related Materials. September 20-22, 1999, Kharkov, Ukraine. P. 61-76.
- 097 The mechanism of phase transformation from carbon nanotube to diamond. Wei B., Zhang J., Liang J., Wu D. Carbon. 1998. Vol. 36, No. 7-8, P. 997-1001.
- 098 The production and application of detonation ultradisperse diamond powders. **Detkov P.Ya., Filatov L.I.** Nov. Prom. Tehnol. 1995. No. 3-4, P. 88-90 (in Russian). // Получение и применение синтетических детонационных ультрадисперсных алмазных порошков. Детков П.Я., Филатов Л.И. Нов. пром. технологии.1995. № 3-4, C. 88-90.
- 099 Nucleation and growth of diamond in detonation products. Yamada K., Sawaoka A.B. J. Amer. Ceram. Soc. 1994.Vol. 77, No. 4, P. 1104.

Polyadamantan as a source of diamond-like carbon. **Kudryavtsev Y.P., Bystrova N.A.** *Izv. Ross. Akad. Nauk. Khim.* 1988. Vol. 47, No. 7, P. 1438-1440 (in Russian). // Полиадамантан как источник алмазоподобного углерода. **Кудрявцев Ю.П., Быстрова Н.А.** // Изв. АН, сер. Хим. 1998. Т. 47, № 7, С. 1438-1440.

See also 057, 064, 334, 538, 555, 612

#### 02.04.01. Shock wave compression of carbon phases

- 101 Allotropes of carbon shock synthesized at pressures up to 15 GPa. Yamada K., Tanabe Y., Swaoka A.B. Phil. Mag. A. 2000. Vol. 80, No. 8, P. 1811-1828.
- 102 A qualitative model of shock induced growth of crystalline mesosystems in condensed media. Lin E. Chem. Phys. Reports. 2000. Vol. 18, No. 10-11, P. 2185-2189.
- 103 Shock synthesis of nanodiamonds from carbon precursors: identification of carbynes. Donnet J.-B., Fousson É., Samirant M., Wang T.K., Pontier-Johnson M., Eckhardt A. Comptes Rendus de l'Académie des Sciences Series IIC Chemistry). 2000. Vol. 3, No. 5, P. 359-364.
- 104 Thermodynamic properties of detonated nanodiamond and powders, received by their dynamic compacting. Malyshev A.N., Lin E.E., Novikov S.A., Pavlovskaya M.A., Sukharenko V.I., Zhogova K.B., Lebedev B.V. Chem. Phys. 2000. Vol. 19, P. 74-75.
- 105 Characterization and some properties of shock-wave diamond powders. **Bogatyreva G.P., Voloshin M.N.** Superhard Materials. 1998. No. 4, P. 82-86.
- Physicochemical properties of shock wave-synthesized nanometric diamond. Bogatyreva G.P., Gvyazdovskaya V.L., Danilenko V.V. Chem. Vap. Deposition. 1997. Vol. 6, No. 1, P. 65-71.
- 107 Formation of diamond during passage of a shock wave in a copper/graphite powder: Formation process and numerical simulation. **Burkhard G., Tamura H., Tanabe Y., Sawaoka A.B., Yamada K.** Appl. Phys. Lett. 1995. Vol. 66, No. 23, P. 3131-3133.
- 108 Predominant parameters in the shock-induced transition from graphite to diamond. Hirai H., Kukino S., Kondo K. J. Appl. Phys. 1995. Vol. 78, No. 5, P. 3052-3059.

See also 026, 050, 076

#### **02.04.02.** Irradiation of carbon species

- 109 Nanocrystalline diamond formation during argon ion irradiation of graphite Wang Z.X., Yu G.Q., Yu L.P., Zhu F.Y., Zhu D.Z., Xu H.J., Ruan M.L. J Appl. Phys. 2002. Vol. 91, No. 5, P. 3480-3482.
- 110 Creation of nanodiamonds by single impacts of highly charged ions upon graphite. Meguro T., Hida A., Suzuki M., Koguchi Y., Takai H., Yamamoto Y., Maeda K., Aoyagi Y. Appl. Phys. Lett. 2001. Vol. 79, No. 23, P. 3866-3868.
- 111 Nanoscale modification of electronic states of graphite by highly charged Ar-ion irradiation. Meguro T., Hida A., Suzuki M., Koguchi Y., Takai H., Yamamoto Y., Maeda K., Aoyagi Y. J. Vac. Sci. Technol. B. 2001. Vol. 19, No. 6, P. 2745-2748.
- 112 Production of nanodiamonds by high-energy ion irradiation of graphite at room temperature. **Daulton T.L., Kirk M.A., Lewis R.S., Rehn L.E.** *Nucl. Instrum. Methods B.* 2001. Vol. 175-177, P. 12-20.
- Lyutovich Y., Banhart F. Appl. Phys. Lett. 1999. Vol. 74, No. 5, P. 659-660.

See also 195, 200, 323, 355, 542, 551, 552, 554

#### 02.04.03. Homogeneous formation in a gas phase

- 114 Plasma synthesis of nanocarbons. Huczko A., Lange H., Cota-Sanchez G., Soucy G. High. Temp. Mater. P-Us. 2002. Vol. 6, No. 3, P. 369-384.
- 115 CO<sub>2</sub>-laser-induced vapor-phase synthesis of HN-diamond nanoparticles at 0.6-2 bar. Buerki P.R., Leutwyler S. Nanostruct. Mater. 1994. Vol. 4, No. 5, P. 577-582.
- Diamond powder formation from the gas phase. Howard W., Frenklach M., Spear K.E., Huang D., Yuan J., Kematick R., Koba R., Phelps A.W. Proceedings of the Second International Conference on New Diamond Science and Technology, Eds.: Messier R., Glass J.T., Butler J.E., Roy R. Materials Research Society, Pittsburgh, PA, 1991, P. 313-319.
- 117 Induced nucleation of diamond powder. Frenklach M., Howard W., Huang D., Yuan J., Spear K.E., Koba R. Appl. Phys. Lett. 1991. Vol. 59, P. 546-548.
- Molecular processes in diamond formation. Frenklach M. In: Proceedings of the Second International Symposium on Diamond Materials, Eds.: Purdes A.J., Angus J.C., Davis R.F., Meyerson B.M., Spear K.E., Yoder M. The Electrochemical Society, Pennington, N.J., 1991, P. 142-153.

- A unifying picture of gas phase formation and growth of PAH, soot, diamond and graphite. Frenklach M. In: Carbon in the Galaxy: Studies From Earth and Space. Eds.: Tarter J.C., Chang S., DeFrees D.J. NASA Conference Publication 1990. Vol. 3061. P. 259-273.
- 120 Synthesis of diamond powder in acetylene-oxygen plasma. Howard W., Huang D., Yuan J., Frenklach M., Spear K.E., Phelps A.W., Koba R. J. Appl. Phys. 1990. Vol. 68. P. 1247-1251.
- 121 Homogeneous nucleation of diamond. Huang D., Frenklach M., Howard W., Kematick R., Spear K., Koba R. Nineteenth Biennial Conference on Carbon, The Pennsylvania State University, 1989, P. 384-385.
- Homogeneous nucleation of diamond powder in the gas phase. Frenklach M., Kematick R., Huang D., Spear K.E., Phelps A.W., Koba R. J. Appl. Phys. 1989. Vol. 66, P. 395-399.

See also 367, 370, 375

#### ■ 02.04.04. Carbide derived (clorination)

- 123 Nucleation, growth and graphitization of diamond nanocrystals during chlorination of carbides. Welz S., Gogotsi Y., McNallan M.J. J. Appl. Phys. 2003. Vol. 93, No. 7, P. 4207-4214.
- 124 X-Ray and HRTEM structural studies of bulk nanoporous carbon materials produced from carbides. Smorgonskaya E., Kyutt R., Danishevskii A., Jardin C., Meaudre R., Marty O., Gordeev S., Grechinskaya A. J. Non-Cryst. Sol. 2002. Vol. 299-302, P. 810-814.
- 125 Conversion of silicon carbide to crystalline diamond-structured carbon at ambient pressure. Gogotsi Y., Welz S., Ersoy D.A., McNallan M.J. Nature. 2001. Vol. 411, P. 283-287.
- Nanostructured carbon coatings on silicon carbide: experimental and theoretical study, in functional gradient materials and surface layers prepared by fine particles technology. Gogotsi Y., Kamyshenko V., Shevchenko V., Welz S., Ersoy D.A., McNallan M.J. Kluwer Academic Pub.: Dordrecht, NL 2001. Ed. by Baraton M.-I., Uvarova I.P. 239-255.
- 127 Carbon coatings on silicon carbide by reaction with chlorine-containing gases. Gogotsi Y.G., Jeon J.-D., McNallan M.J. J. Mater. Chem. 1997. Vol. 7, No. 9, P. 1841-1848.

#### 03. Models for formation of nanodiamonds

#### > 03.01. Carbon phase diagram at the Nanoscale

- 128 Phase diagram of ultrafine carbon. Vereshchagin A.L. Combust. Explos. Shock waves 2002. Vol.38, No.3, P.358-359.
- 129 Kinetics and thermodynamic behavior of carbon clusters under high pressure and high temperature. Ree F.H., Winter N.W., Glosli J.N., Viecelli J.A., *Physica B.* 1999. Vol. 265, P. 223-229.
- Liquid-liquid phase transformation in carbon. Glosli J.N., Ree F.H. Phys. Rev. Lett. 1999. Vol. 82, No. 23, P. 4659-4662.
- 131 The melting line of diamond determined via atomistic computer simulation. Glosli J.N., Ree F.H. J. Chem. Phys. 1999. Vol. 110, No. 1, P. 441-446.
- 132 The pressure-temperature phase and transformation diagram for carbon: updated through 1994. Bundy F.P., Bassett W.A., Weathers M.S., Hemley R.J., Mao H.K., Goncharov A.F. Curbon. 1996. Vol. 34, P. 141-153.
- Study of onion-like carbon (OLC) formation from ultra disperse diamond. Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Malkov I.Yu., Gutakovskii A.K., Stankus S.V. Khairulin R.A. In: Science and Technology of Fullerene Materials, Eds.: Bernuer P., Bethune D.S., Chiang L.Y., Ebbessen T.W., Metzger R.M., Minmire J.W. Mater. Res. Soc. Proc. Vol. 359, Pittsburgh, PA, 1995, P. 105-110.
- Ab-initio calculations of properties of carbon in the amorphous and liquid states. Galli G., Martin R.M., Car R., Parrinello M. Phys. Rev. B. 1990. Vol. 42, P. 7470-7482.

See also 011, 047, 049, 050, 058, 059, 067, 104, 110, 146, 149, 153, 156, 157, 197

#### ▶ 03.02. Computer simulations of nanodiamond structure

- 135 Bonding and stability of hybrid diamond/nanotube structures. Shenderova O.A., Areshkin D., Brenner D.W., Mol.Simulat. 2003. Vol. 29, No. 4, P. 259-268.
- 136 Carbon based nanostructures: diamond clusters structured with nanotubes. Shenderova O.A., Areshkin D., Brenner D.W. Mater. Res. 2003. Vol. 6, No. 1, P. 11-19.
- First principles investigations of diamond ultrananocrystals. Barnard A.S., Russo S.P., Snook I.K., Int. J. Mod. Phys. B. (2003) in press.

- Hydrogen stabilization of {111} nanodiamond. Barnard A.S., Marks N.A., Russo S.P., Snook I.K. Mat. Res. Soc. Symp. Proc. 2003. Vol. 740.
- 139 Quantum confinement and fullerene-like surface reconstructions in nanodiamonds. Raty J.-Y., Galli G., Bostedt C., van Buuren T.W., Terminello L.J. Phys. Rev. Lett. 2003. Vol. 90, art. no.- 037401.
- 140 Atomic modeling of carbon-based nanostructures as a tool for developing new materials and technologies. Brenner D.W., Shenderova O.A., Areshkin D.A., Schall J.D., Frankland S.J. Computer Modeling & Eng.Sci. 2002. Vol. 3, No. 5, P. 643-673.
- 141 Tight-binding molecular-dynamics simulation of impurities in ultrananocrystallinediamond grain boundaries. Zapol P., Sternberg M., Curtiss L.A., Frauenheim T., Gruen D.M. Phys. Rev. B. 2002. Vol. 65, No. 4, art. no.-045403.
- 142 Structural models of amorphous carbon and its surfaces by tight-binding molecular dynamics. Haerle R., Baldereschi A., Galli G. J. Non-Cryst. Solids. 2000. Vol. 266, P. 740-745.
- 143 Tight binding modeling of properties related to field emission from nanodiamond clusters. Areshkin D.A., Shenderova O.A., Zhirnov V.V., Pal A.F., Hren J.J., Brenner D.W. Mat. Res. Soc. Proc. 2000. Vol. 621, R.5.161.

See also 007, 048, 051, 066, 107, 129, 144, 145, 147, 152, 259, 311, 529, 539, 562, 563, 564

#### > 03.03. Stability of nanodiamonds

- Ab initio modelling of the stability of nanocrystalline diamond morphologies. Barnard A.S., Russo S.P., Snook I.K. Phil. Mag. Lett. 2003. Vol. 83, No. 1, P. 39-45.
- 145 Hydrogenation of nanodiamond surfaces: Structure and effects on crystalline stability. Russo S.P., Barnard A.S., Snook I.K. Surf. Rev. Lett. (2003) in press.
- Size dependent phase stability of carbon nanoparticles: Nanodiamond versus fullerenes. Barnard A.S., Russo S.P., Snook I.K. J. Chem. Phys. 2003. Vol. 118, No. 11. P. 5094-5097.
- 147 Structural relaxation and relative stability of nanodiamond morphologies. Barnard A.S., Russo S.P., Snook I.K., Diamond Relat. Mater. (2003) in press.
- On energetic stability of carbon nanoclasters. **Kozyrev S.V., Leshev D.V.,** Shaklina I.V. Phys. Solid State. 2001. Vol. 43, No. 5, P. 963-966.

- Size dependence of structural stability in nanocrystalline diamond. Prawer S., Peng J.L., Orwa J.O., McCallum J.C., Jamieson D.N., Bursill L.A. Phys. Rev. B. 2000. Vol. 62, No. 24, P. R16360-R16363.
- 150 The size dependence of the diamond-graphite transition. Jiang Q., Li J.C., Wilde G. Jour. Phys.: Condens. Matter. 2000. Vol. 12, No. 26. P. 5623-5627.
- 151 Analysis of stability of nanoparticles. **Dolgushev N.V., Suvorov S.A.** Doklady Physical Chemistry. 1999. Vol. 364, No. 1-3, P. 15-17.
- 152 Carbon particle phase stability as a function of size. Winter N.W., Ree F.H. Comp. Aided Design. 1998. Vol. 5, P. 279-294.
- 153 Stability of the graphite and diamond phases of finite carbon clusters. Winter N.W., Ree F.H. 11 International Detonation Symposium, Snowmass, August 29-September 4, 1998, Colorado, USA. P. 480-489.
- Mechanism of thermal stability enhancement in boron-doped ultrafine diamonds. Ivanov Yu.N., Kalinkin A.V., Tushko Yu.V. Inorganic Materials.
   1997. Vol. 33, No. 7, P. 674-677. Translated from Neorganicheskie Materialy.
   1997. Vol. 33, No. 7, P. 803-806.
- 155 Properties of diamond and diamond-like clusters in nanometric dimensions. Halicioglu T., Phys. Stat. Sol. B. 1997. Vol. 199, P. 345-350.
- 156 Energetical preference of diamond nanoparticles. Gamarnik M.Y. Phys. Rev. B. 1996. Vol. 54, P. 2150-2156.
- 157 Nanometre-sized diamonds are more stable than graphite. Badziag P., Verwoerd W.S., Ellis W.P., Greiner N.R. Nature. 1990. Vol. 343, P. 244-245.

See also 001, 006, 007, 011, 129, 202, 529

### > 03.04. Models of nanodiamond formation by other means than detonation synthesis

- 158 The mechanism of diamond nucleation from energetic species. Lifshitz Y., Kohler T., Frauenheim T., Guzmann I., Hoffman A., Zhang R.Q., Zhou X.T., Lee S.T. Science. 2002. Vol. 297, No. 5586, P. 1531-1533.
- 159 On the cluster mechanism of diamond synthesis from different solid carbon forms. Lin E. Phys. Solid State. 2000. Vol. 42, No. 10, P. 1946-1951. (also 02.01 and 02.04)
- 160 Crystal growth of CVD diamond and some of its peculiarities. **Piekarczyk W.**, *Cryst. Res. Technol.* 1999. Vol. 34, No. 5-6, P. 553-563.
- 161 Charged cluster model in the low pressure synthesis of diamond. Hwang N.M., Hahn J.H., Yoon D. J. Cryst. Growth. 1996. Vol. 162. P. 55-68.

- 162 Chemical potential of carbon in the low pressure synthesis of diamond. Hwang N.M., Hahn J.H., Yoon D. J. Cryst. Growth. 1996. Vol. 160, P. 87.
- Theoretical studies of growth of diamond (110) from dicarbon. Redfern P.C., Horner D.A., Curtiss L.A., D.M. Gruen. J. Phys. Chem. 1996. Vol. 100, No. 28, P. 11654-11663.
- 164 A theoretical study of the energetics of insertion of dicarbon (C<sub>2</sub>) and vinylidene into methane C-H bonds. Horner D.A., Curtiss L.A., Gruen D.M. Chem. Phys. Lett. 1995. Vol. 233, P. 234-248.

See also 178, 189, 279, 298, 310, 520

#### 04. Physical properties of nanodiamonds

- 165 Thermodynamics of surface phenomena in ultradispersed diamond systems. **Duda T.M.** Superhard Materials. 2001. No. 3, P. 48-56. // Термодинамика поверхностных явлений ультрадисперсных алмазных систем. Дуда Т. М. Сверхтвердые материалы. 2001. № 3, C. 54-61.
- Magnetic properties of finely dispersed diamond powders. Bogatyreva G.P., Nevstruev G.F., Ilnitskaya G.D. Superhard Materials. 2000. No. 1. P. 2-6. // Магнитные свойства тонкодисперсных алмазных порошков. Богатырева Г.П., Невструев Г.Ф., Ильницкая Г.Д. Сверхтвердые материалы. 2000. № 1, С. 4-9.
- Structure and properties of ultradispersed diamond of detonated synthesis. Chiganova G.A. Chiganov A.S. Inorg. Mater. -Engl. Tr. 1999. Vol. 35, P. 480-484.
- 168 Comparative study of nanocrystalline diamond. Obraztsov A.M., Timofeyev M.A., Guseva M.B., Babaev V.G., Valliulova Z.Kh., Babina V.M. Diamond Relat. Mater. 1995. Vol. 4, No. 4, P. 968-971.
- 169 Nano-ball bearing effect of ultra-fine particles of cluster diamond. Ouyang Q., Okada K. Appl. Surf. Sci. 1994. Vol. 78, P. 309-313.
- 170 The properties of ultradisperse diamonds produced by detonation synthesis. Chiganova G.A., Chiganov A.S., Tushkov Yu.V. Izv. Ross. Akad. Nauk, Neorg. Mater. 1994. T. 30, No. 1, P. 56-58 (in Russian). // Свойства ультрадисперсных алмазов, полученных методом детонационного синтеза. Чиганова Г.А., Чиганов А.С., Тушков Ю.В. Изв. Академии Наук. Неорганические Материалы. 1994. Т. 30, № 1, С. 56-58.
- 171 Properties of ultrafine diamond clusters from detonation synthesis. Vereschagin A.L., Sakovich G.V., Komarov V.F., Petrov E.A. Diamond Rel. Mater. 1993. Vol. 3, P. 160-162.
- The properties and IR-characteristics of chemically modified nanodiamonds. Kulakova I.I., Tarasevich B.N., Rudenko A.P., Dorzhpalamyn P., Gubarevich T.M. Vestn. Mosk. Un-ta. Ser.2. Khimiya. 1993. Vol. 34, No. 5, P. 506-510 (in Russian). // Природа и ИК-спектральные характеристики химически модифицированных ультрадисперсных алмазов. Кулакова И.И., Тарасевич Б.Н., Руденко А.П., Доржпаламын П., Губаревич Т.М. Вестн. Моск. Ун-та. Сер.2. Химия. 1993. Т. 34, № 5, С. 506-510.
- 173 The properties of ultrafine diamond clusters produced by detonation synthesis. Vereschagin A.L., Sakovich G.V., Komarov V.F., Petrov E.A. Diamond Relat. Mater. 1993. No. 3, P. 160-162.

174 Study of ultra disperse diamond obtained using explosion energy. Kuznetsov V.L., Aleksandrov M.N., Zagoruiko I.V., Chuvilin A.L., Moroz E.M., Kolomiichuk V.N., Likholobov V.A., Brylyakov P.M., Sokovich G.V. Carbon. 1991. Vol. 29, P. 665-668.

See also 075, 105, 106

#### > 04.01. Structure of nanodiamonds

- 175 Structure of detonation diamond nanoparticles. Vereshchagin A.L., Yur'ev G.S. *Inorg. Mater.* 2003. Vol. 39, No. 3, P. 247-253.
- Analysis of short and long range atomic order in nanocrystalline diamonds with application of powder diffractometry. Palosz B., Grzanka E., Gierlotka S., Stel'makh S., Pielaszek R., Bismayer U., Neuefeind J., Weber H.P., Proffen T., Von Dreele R., Palosz W. Z. Kristallogr. 2002. Vol. 217, No. 10, P. 497-509.
- 177 Field electron emission and nanostructural correlations for diamond and related materials. Frolov V.D., Karabutov A.V., Pimenov S.M., Konov V.I. Ultramicroscopy. 2003. Vol. 95, No. 1-4, P. 99-105.
- 178 Size and surface structure of diamond nano-crystals. Bursill L.A., Fullerton A.L., Bourgeois L.N Intern. J. Mod. Phys. B. 2001. Vol. 15, No. 31, P. 4087-4102.
- 179 Structure of detonation nanodiamonds. Vereshchagin A.L., Sakovich G.V. Mendeleev Communs. 2001. No. 1, P. 39-41.
- Effect of hydrogen on the structure of ultradisperse diamond. Aleksenskii A.E., Baidakova M.V., Vul'A.Ya., Dideikin A.T., Siklitsky V.I., Vul' S.P. Phys. Solid State. 2000. Vol. 42, No. 8, P. 1575-1578.
- 181 Structure and defects of detonation synthesis nanodiamond. Iakoubovskii K., Baidakova M.V., Wouters B.H., Stesmans A., Adriaenssens G.J., Vul'A.Y., Grobet P.J. Diam. Rel. Mater. 2000. Vol. 9, No. 3-6, P. 861-865.
- 182 Structure of ultradisperse diamonds. Andreev V.D., Sozin Yu.I. Phys. Solid State. 1999. Vol. 41, No. 10, P. 1736-1739.
- 183 The structure of diamond nanoclusters. Aleksenskii A.E., Baidakova M.V., Vul'A.Ya., Siklitsky V.I. Phys. Solid State. 1999. Vol. 41, No. 4, P. 668-671.
- 184 Fractal structure of ultradisperse-diamond clusters. Baidakova M.V., Vul'A.Ya., Siklitsky V.I., Faleev N.N. Phys. Solid State. 1998. Vol. 40, No. 4, P. 715-718.
- 185 Structural properties of diamond fine particles and clusters prepared by detonation and decomposition of TNT. Saha D.K., Koga K., Takeo H. Surf. Sci. 1998. Vol. 400, P. 134-139.

- Structure features of explosion-synthesized nanodispersed diamonds. Kurdyumov A.V., Ostrovskaya N.F., Zelyavskii V.B., Borimchuk N.I., Yarosh V.V. Superhard Materials. 1998. No. 4, P. 20-25. // Структурные особенности нанодисперсных алмазов динамического синтеза. Курдюмов А.В., Островская Н.Ф., Зелявский В.Б., Боримчук Н.И., Ярош В.В. Сверхтвердые материалы. 1998. № 4. С. 23-29.
- 187 Structure of ultradispersed diamond crystallites. Andreyev V.D., Sozin Yu.I. Superhard Materials. 1998. No. 4, P. 61-65. // Структура кристаллитов ультрадисперсных алмазов. Андреев В.Д., Созин Ю.И. Сверхтвердые материалы. 1998. № 4, С. 67-72.
- Plasmon response and structure of nanocrystalline diamond powder. **Bursill L.A., Peng J.L., Prawer S.** *Phil. Mag. A.* 1997. Vol. 76, No. 4, P. 769-781.
- 189 Structure and properties of detonation soot particles. Mal'kov I.Y., Titov V.M. AIP Conference Proceedings. 1996. Vol. 370, No. 1, P. 783-786.
- 190 Structure, substructure and phase composition of ADS and UDA ultradispersed diamond. **Bogatyreva G.P., Sozin Yu.I., Oleinik N.A.** Superhard Materials. 1998. No. 4. P. 3-7. // Структура, субструктура, фазовый состав ультрадисперсных алмазов АДС и УДА. **Богатырева Г.П., Созин Ю.И., Олейник Н.А.** Сверхтвердые материалы. 1998. № 4, P. 5-10.

See also 010, 018, 205, 351, 412, 425, 427, 428, 502, 536

#### ➤ 04.02. Mechanical properties

- 191 Nanomechanical resonant structures in nanocrystalline diamond. Sekaric L., Parpia J.M., Craighead H.G., Feygelson T., Houston B.H., Butler J.E. Appl. Phys. Lett. 2002. Vol. 81, P. 4455-4457.
- 192 Surface acoustic waves on nanocrystalline diamond. Bi B., Huang W.-S., Asmussen J., Golding B. Diam. Rel. Mater. 2002. Vol. 11, P. 677-680.
- Some speculations on the density of particles of dynamically synthesized diamond nanopowder. Bochechka A.A., Romanko L.A., Gavrilova V.S. Superhard Materials. 2001. No. 5, P. 72-73. // О плотности частиц алмазного нанопорошка динамического синтеза. Бочечка А.А., Романко Л.А., Гаврилова В.С. Сверхтвердые материалы. 2001. № 5, С. 76-78.
- 194 Effect of diamond dispersion on the superplastic rheology of zinc sulfide. Xue L.A., Raj R. J. Amer. Ceram. Soc. 1990. Vol. 73, No. 8, P. 2213-2216.

Sec also 013, 190, 197, 421, 425, 428, 439, 441, 442, 523

#### > 04.03. Phase transitions

- 195 Transformation of diamond nanoparticles into carbon onions under electron irradiation. Roddatis V.V., Kuznetsov V.L., Butenko Y.V., Su D.S., Schlogl R. Phys. Phys. Chem. Chem. Phys. 2002. Vol. 4, No. 10, P. 1964-1967.
- Effect of heat treatment on the properties of nano-diamond under oxygen and argon ambient. Xu N.S., Chen J., Deng S.Z. Diam. Rel. Mater. 2002. Vol. 11, P. 249-256.
- 197 Size and temperature dependence of nanodiamond-nanographite transition related with surface stress. Zhao D.S., Zhao M., Jiang Q. Diamond Relat. Mater. 2002. Vol. 11, P. 234-236.
- 198 Nanostructural study of the thermal transformation of diamond-like amorphous carbon into an ultrahard carbon nanocomposite. Martinez-Miranda L.J., Siegal M.P., Provencio P.P. Appl. Phys. Lett. 2001. Vol. 79, No. 4, P. 542-544.
- 199 Recovery of diamond after irradiation at high energy and annealing. Prawer S., Bursill L.A., Lai P.F. Diamond Relat. Mater. 2001. Vol. 10, P. 82-86.
- 200 Transformation of diamond nanoparticles into carbon onions under electron irradiation. Roddatis V.V., Kuznetsov V.L., Butenko Y.V., Su D.S., Schlogl R. Phys. Phys. Chem. Chem. Phys. 2002. Vol. 4, No. 10, P. 1964-1967.
- 201 Heat-treatment effect on the nano-sized graphite p-electron system during diamond to graphite conversion. Prasad L.V., Sato H., Enoki T., Hishiyama Y., Kaburagi Y., Rao A.M., Eklund P.C., Oshida K., Endo M. Phys. Rev. B. 2000. Vol. 62, No. 16, P. 11209-11218.
- 202 The kinetics of the graphitization of dispersed diamonds at 'low' temperatures. Butenko Yu.V., Kuznetsov V.L., Chuvilin A.L., Kolomiichuk V.N., Stankus S.V., Khairulin R.A., Segall B. J. App. Phys. 2000. Vol. 88, No. 7, P. 4380-4388.
- 203 Graphitization of nanodiamond powder annealed in argon ambient. Chen J., Deng S.Z., Chen J., Yu Z.X., Xu N.S. Appl. Phys. Lett. 1999. Vol. 74, No. 24. P. 3651-3653.
- 204 Ultradisperse-diamond nanoclusters. fractal structure and diamond-graphite phase transition. Baidakova M.V., Siklitsky V.I., Vul A.Ya. Chaos, Solitons, & Fractals. 1999. Vol. 10, No. 12, P. 2153-2163.
- 205 Diamond-graphite phase-transition in ultradisperse-diamond clusters. Aleksenskii A.E., Baidakova M.V., Vul' A.Y., Davydov V.Y., Pavtsova Y.A. Phys. Solid State. 1997. Vol. 39, No. 6, P. 1007-1015.
- 206 A microscopic model for surface-induced diamond to graphite transitions. **DeVita A., Galli G., Canning A., Car R.** *Nature.* 1996. Vol. 379, P. 523-526.
- 207 Melting of diamond at high pressure. Galli G., Martin R.M., Car R., Parrinello M. Science. 1990. Vol. 250, P. 1547.

208 Carbon: the nature of the liquid state. Galli G., Martin R.M., Car R., Parrinello M. Phys. Rev. Lett. 1989. Vol. 63, P. 988-991.

See also 050, 060, 079, 093, 112, 133, 254, 302, 323, 348, 512, 535, 538, 543, 551, 552, 553, 554, 555, 558, 559

#### > 04.04. Optical properties

- 209 Detonation synthesis ultradispersed diamond structural properties investigation by infrared absorption. Mironov E., Koretz A., Petrov E. Diamond Relat. Mater. 2002. Vol. 11, P. 872-876.
- 210 Large-scale calculation of optical dielectric functions of diamond nanocrystallites. Kurokawa Y., Nomura S., Takemori T., Aoyagi Y. Phys. Rev. B. 2000. Vol. 61, No. 19, P. 12616-12619.
- Optical properties of nanodiamond layers. Aleksenskii A.E., Osipov V.Yu., Vul'A.Ya., Ber B.Ya., Smirnov A.B., Melekhin V.G., Adriaenssens G.J., Iakoubovskii K. Phys. Solid State. 2001. Vol. 43, No. 1, P. 145-150.
- 212 Plasmon excitations in coated nanocrystalline diamond spheres. Fehlhaber R.P., Bursill L.A. Phys, Rev. B. 2000. Vol. 62, No. 24, P. 17094-17102.
- 213 Power laser light-induced photoluminescence from detonation-synthesized 5nm-sized diamonds. Glinka Yu.D., Lin K.W., Chang H.C., Lin S.H., Chen Y.T. Diffus. Defect Data. Pt.A. 2000. P. 186-187; (Defects and Diffusion in Ceramics. 2000. Vol. 3, P. 37-44).
- 214 The Raman spectrum of nanocrystalline diamond. Prawer S., Nugent K.W., Jamieson D.N., Orwa J.O., Bursill L.A., Peng J.L. Chem. Phys. Lett. 2000. Vol. 332, No. 1-2, P. 93-97.
- 215 Multiphoton-excited luminescence from diamond nanoparticles. Glinka Yu.D., Lin K.-W., Chang H.-C., Lin S.H. J. Phys. Chem. B. 1999. Vol. 103, No. 21, P. 4251-4263.
- 216 Nanoscale size effects on the plasmon response of diamond powder. Fehlhaber R.P., Bursill L.A. Phil. Mag. B. 1999. Vol. 79, No. 3, P. 477-489.
- 217 Two-photon-excited luminescence spectra in diamond nanocrystals. Mikov S.N., Igo A.V., Gorelik V.S. Phys. Solid State. 1999. Vol. 41, No. 6, P. 1012-1014.
- 218 FTIR study of the adsorption of water on ultradispersed diamond powder surface. Ji S., Jiang T., Xub K., Li S. Appl. Surf. Sci. 1998. Vol. 133, No. 4, P. 231-238.

- 219 Optical properties of layers of ultradisperse diamond obtained from an aqueous suspension. Aleksenskii A.E., Osipov V.Yu., Kryukov N.A., Adamchuk V.K., Abaev M.I., Vul'S.P., Vul'A.Ya. Technical Physics Letters. 1997. Vol. 23, No. 11, P. 874-876.
- 220 Photoluminescence spectra of ultradisperse diamond. Kompan M.E., Terukov E.I., Gordeev S.K., Zhukov S.G., Nikolaev Yu.A. Phys. Solid State. 1997. Vol. 39, No. 12, P. 1928-1929.
- 221 FTIR studies on the spectral changes of the surface functional groups of ultradispersed diamond powder synthesized by explosive detonation after treatment in hydrogen, nitrogen, methane and air at different temperatures. Xu T., Jiang K., Ji S. J. Chem. Soc. Faraday Trans. 1996. Vol. 92, No. 18, P. 3401-3406.
- Raman and photoluminescence spectra of diamond particles with 1-5 nm diameter. Obraztsova E.D. Kuznetsov V.L., Loubnin E.N., Pimenov S.M., Pereverzev V.G. NATO ASI Series 3, Nanoparticles in Solids and Solutions, Eds. Fendler J.H., Dekany I. Kluwer Academic Pub.: 1996. Vol. 18, P. 485-496. (also 06.03)
- 223 FTIR study of ultradispersed diamond powder synthesized by explosive detonation **Jiang T., Xu K.** Carbon. 1995. Vol. 33, No. 12, P. 1663-1671.
- Raman scattering from nanometer-sized diamond. Yoshikawa M., Mori Y., Obata H., Maegawa M., Katagiri G., Ishida H., Ishitani A. Appl. Phys. Lett. 1995. Vol. 67, No. 5, P. 694-696.
- 225 Raman scattering of light on diamond quantum dots in a matrix of potassium bromide. Mikov S.N., Igo A.V., Gorelik V.S. Phys. Solid State. 1995. Vol. 37, No. 10, P. 1671-1673.

See also 172, 240, 289, 293, 304, 349, 356, 362, 471, 518, 530, 578, 585, 592

#### ➤ 04.05. Electronic properties

- 226 Ab initio modelling of band states in doped diamond. Barnard A.S., Russo S.P., Snook I.K. Phil. Mag. 2003. Vol. 83, No. 9, P. 1163-1179.
- 227 Ab initio modelling of B and N in C<sub>29</sub> and C<sub>29</sub>H<sub>24</sub> nanocrystalline diamond. Barnard A.S., Russo S.P., Snook I.K. J. Chem. Phys. 2003, in press
- 228 Electron spectroscopy of nanodiamond surface states. Belobrov P.I., Bursill L.A., Maslakov K.I., Dementjev A.P. Appl. Surf. Sci. 2003. Vol. 210, No. 1-4, in press.
- 229 Sp(2) bonding distributions in nanocrystalline diamond particles by electron energy loss spectroscopy. Okada K., Kimoto K., Komatsu S., Matsumoto S. J. Appl. Phys. 2003. Vol. 93, No. 5, P. 3120-3122

- 230 Electronic states of nanodiamond. **Belobrov P.I., Bursill L.A., Dementjev A.P., Detkov P.Ya., Maslakov K.I.** Proc. 14-th Intern. Symp. On
  Thin Films in Electronics, Kharkov, Ukraine, 2002, April 22-27, P. 25-29.
- 231 EPR studies of submicron and nanometric diamond. Maevsky V.M., Mozdor E.V., Padalko V.I. Superhard Materials. 2002. No. 6. // ЭПР субмикро- и наноразмерных синтетических алмазов. Маевский В.М., Моздор Е.В., Падалко В.И. Сверхтвердые материалы. 2002. № 6. С. 43-50.
- 232 Temperature dependence of electroresistivity, negative and positive magnetoresistivity of carbon nanoparticles. Romanenko A.I., Anikeeva O.B., Okotrub A.V., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Dong C., Ni Y. Mat. Res. Sym. Proc. 2002. Vol. 703, P. 259-264.
- 233 Electrical resistivity of graphitized ultra-disperse diamond and onion-like carbon. Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Romanenko A.I., Okotrub A.V. Chem. Phys. Lett. 2001. Vol. 336, P. 397-404.
- 234 Endo-fullerene and doped diamond nanocrystallite-based models of qubits for solid-state quantum computers. Park S., Srivastava D., Cho K. J. Nanoscience and Nanotech. 2001. Vol. 1, P. 75.
- 235 Microscopic field emission investigation of nanodiamond and AlN coated Si tips. Günther B., Göhl A., Müller G., Givargizov E., Zadorozhnaya L., Stepanova A., Spitsyn B., Blaut-Bachev A.N., Seleznev B., Suetin N. J. Vac. Sci. Technol. B. 2001. Vol. 19, P. 942-945.
- 236 Paramagnetic properties of nanodiamond. Belobrov P.I., Gordeev S.K., Petrakovskaya E.A., Falaleev O.V. Doklady Physics. 2001. Vol. 46, No. 7, P. 459-462.
- 237 Electron transport and electron field emission of nanodiamond synthesized by explosive detonation. He D., Shao L., Gong W., Xie E., Xu K., Chen G. Diamond Rel. Mater. 2000. Vol. 9, No. 9-10, P.1600-1603.
- 238 Comment on "Quantum confinement effect in diamond nanocrystals studied spectroscopy". Ley L., Ristein J., Graupner R. Phys. Rev. Lett. 2000. Vol. 84, No. 24, P. 5679.
- 239 Electronic properties of nanocrystalline layers of wide-band-gap materials. Szmidt J. Chaos, Solitons, & Fractals. 1999. Vol. 10, No. 12, P. 2099-2152.
- Plasmon excitations in small diamond spheres by fast penetrating electrons. Fehlhaber R.P., Bursill L.A. Phys. Rev. B. 1999. Vol. 60, No. 20, P. 14147-14153.
- 241 Role of the curvature of atomic layers in electron field emission from graphitic nanostructured carbon. Obraztsov A.N., Volkov A.P., Pavlovsky I.Yu., Chuvilin A.L., Rudina N.A., Kuznetsov V.L. JETP Lett. 1999. Vol. 69, No. 5, P. 411-417.

- Quantum confinement effect in diamond nanocrystals studied by X-ray-absorption spectroscopy. Chang Y.K., Hsieh H.H., Pong W.F., Tsai M.-H., Chien F.Z., Tseng P.K., Chen L.C., Wang T.Y., Chen K.H., Bhusari D.M., Yang J.R., Lin S.T. Phys. Rev. Lett. 1999. Vol. 82, No. 26, P. 5377-5380.
- 243 Band gaps in diamond-graphite hybrids. Sen R., Sumathy R., Rao C.N.R. J. Mater. Res. 1996. Vol. 11, No. 12, P. 2961-2963.
- 244 Diamond-graphite hybrids and the nature of amorphous carbon and diamond-like carbon. Sen R., Sumathy R., Rao C.N.R. J. Mater. Res. 1995. Vol. 10, No. 10, P. 2531-2535.

See also 143, 201, 212, 216, 248, 250, 256, 284, 285, 302, 313, 325, 338, 339, 340, 341, 343, 357, 364, 367, 371, 406, 422, 474, 475, 485, 523, 529, 531, 609

#### 05. Modification of nanodiamond surface

#### 05.01.Properties of nanodiamond surface

- 245 Adatoms and nanoengineering of carbon. Ewels C.P., Heggie M.I., Briddon P.R. Chem. Phys. Lett. 2002. Vol. 351, No. 3-4, P. 178-182.
- Adsorption and catalytic processes on the surface of nanodispersed diamonds. Bogatyreva G.P., Marinich M.A., Ishchenko E.V., Gvyazdovskaya V.L., Bazaly G.A. Superhard Materials. 2002. No. 6. // Адсорбционные и каталитические процессы на поверхности нанодисперсных алмазов. Богатырева Г.П., Маринич М.А., Ищенко Е.В., Гвяздовская В.Л., Базалий Г.А. Сверхтвердые материалы. 2002. № 6, С. 10-15.
- 247 Chemical state of carbon atoms on ultradispersed diamond and natural diamond surfaces before and after in-situ H- treatment. Dementjev A.P., Maslakov K.I., Zabusov O.O. New Diamond Front. Carbon Technol. 2002. Vol. 12, No. 1, P. 11-24.
- 248 Defects and impurities in nanodiamonds: EPR, NMR and TEM study. Shames A.I., Panich A.M., Kempiński W., Aleksenskii A.E., Baidakova M.V., Dideikin A.T., Osipov V.Yu., Siklitsky V.I., Osawa E., Ozawa M., Vul'A.Ya. J. Phys. Chem. Sol. 2002. Vol. 63, No. 11, P. 1993-2001.
- Nanostructured porous diamond powders and properties of their surface. Novikov N.V., Bogatyreva G.P., Voloshin M.N., Marinich M.A., Padalko V.I., Slavinsky Yu.S. Superhard Materials. 2002. No. 6. // Наноструктурные пористые алмазные порошки и их поверхностные свойства. Новиков Н.В., Богатырева Г.П., Волошин М.Н., Маринич М.А., Падалко В.И., Славинский Ю.С. Сверхтвердые материалы. 2002. № 6, С. 4-9.
- 250 Surface bonding state of nano-crystalline diamond balls. Peng J.L., Bulcock S., Belobrov P.I., Bursill L.A. Intern. J. Mod. Phys. B. 2001. Vol. 15, No. 31., P. 4071-4085.
- 251 Chemical properties of detonation-synthesized ultradispersed diamond. Kulakova I.I., Gubarevich T.M., Dolmatov V.Yu., Rudenko A.P. Superhard Materials. 2000. No. 1, P. 42-48. // Химические свойства ультрадисперсных детонационных алмазов. Кулакова И.И., Губаревич Т.М., Долматов В.Ю., Руденко А.П. Сверхтвердые материалы. 2000. № 1, С. 46-53.
- 252 Physicochemical properties of dynamically synthesized diamonds. Nozhkina A.V., Kolchemanov N.A., Kardanov A.A., Detkov P.Ya. Superhard Materials. 2000. No. 1, P. 73-77. // Физико-химические свойства алмазов динамического синтеза. Ножкина А.В., Колчеманов Н.А., Карданов А.А., Детков П.Я. Сверхтвердые материалы. 2000. № 1, С. 78-84.

- 253 Sorption activity of nanodiamonds with respect to cesium. Chukhaeva S.I., Cheburina L.A. Superhard Materials. 2000. No. 2, P. 39-43. // Сорбционная активность наноалмазов по цезию. Чухаева С.И., Чебурина Л.А. Сверхтвердые материалы. 2000. № 2, С. 43-48.
- 254 The effect of heat treatment on the surface condition of nanodiamond Bogatyreva G.P., Voloshin M.M., Malogolovets V.G., Gvyazdovskaya V.L., Ilnitskaya G.D. J. Optoelectr.Adv. Mater. 2000. Vol. 2, No. 5, P. 469-473.
- 255 Surface electrochemical properties of dynamically synthesized and nanodiamond. Bogatyreva G.P., Voloshin M.N., Marinich Malogolovets V.G., Gvyazdovskaya V.L., Gavrilova V.S. Superhard Materials. 1999. No. 6. P. 41-44. // Поверхностные и электрохимические свойства наноалмаза линамического синтеза. Богатырева Волошин М.Н., Маринич М.А., Малоголовен В.Г., Гвяздовская В.Л., Гаврилова В.С. Сверхтвердые материалы. 1999. № 6, С. 42-46.
- On the nature of grain boundaries in nanocrystalline diamond. Keblinski P., Wolf D., Cleri F., Phillpot S.R., Gleiter H. MRS Bulletin. 1998. Vol. 23, No. 9, P. 36-41.
- 257 Physicochemical properties of fractions isolated from ultradispersed diamonds. Chukhaeva S.I., Detkov P.Ya., Tkachenko A.P., Toropov A.D. Superhard Materials. 1998. No. 4, P. 29-35.
- Study on the tribological properties of ultradispersed diamond containing soot as an oil additive. Xu T., Zhao J., Xue Q. Tribol. Trans. 1997. Vol. 40, No. 1, P. 178.
- 259 Graphitization of diamond (111) studied by first principles molecular dynamics. DeVita A., Galli G., Canning A., Car R. Appl. Surf. Sci. 1996. Vol. 104, P. 297-303.
- 260 Diamond (111) surface. Iarlori S., Galli G., Gygi F., Parrinello M., Tosatti E. Physica B. 1993. Vol. 185, P. 539-541.
- 261 A study of the surface composition of diamond-like carbon. Petrova L.A., Vereschagin A.L., Novosyolov V.V., Brylyakov P.M., Shein N.V. Superhard Materials. 1989. No. 4, P. 3-5. // Исследование состава поверхностных групп алмазоподобной фазы углерода. Петрова Л.А., Верещагин А.Л., Новоселов В.В., Брыляков П.М., Шеин Н.В. Сверхтвёрдые материалы. 1989. № 4, С. 3-5.

See also 139, 141, 165, 178, 181, 192, 196, 218, 221, 223, 259, 262, 285, 308, 316, 470, 500, 510, 543, 578

#### > 05.02 Chemical modification of surface

- 262 On the physics and chemistry of the diamond surface. Spitsyn B.V., Kulakova I.I. Problemy i dostizheniya fiziko-khimicheskoj i inzhenernoj nauki v oblasti nanomaterialov (Mezhd. shkola povysheniya kvalifikatsii "Inzhenerno-khimicheskaya nauka dlya peredovyh tehnologij, VII sessiya"). 2002, Moscow: "FTI im. Karpova". Vol. 2, P. 101-123 (in Russian). // К физико-химии поверхности алмаза. Спицын Б.В., Кулакова И.И. Проблемы и достижения физико-химической и инженерной науки в области наноматериалов (Межд. школа повышения квалификации "Инженерно-химическая наука для передовых технологий, VII сессия"). 2002, М.: "ФТИ им. Карпова" Т. 2, С. 101-123.
- 263 Peculiarities of the heat cotreatment of UDD and non-diamond carbon under different p, T-conditions. Senyut' V.T. Superhard Materials. 2002. No. 6. // Особенности совместной термообработки УДА и неалмазного углерода при различных p, Т-условиях. Сенють В.Т. Сверхтвердые материалы. 2002. № 6, С. 68-77.
- Surface modification on hydrogenated diamond powder by radical reactions in chloroform solutions. Tsubota T., Urabe K., Egawa S., Takagi H., Kusakabe K., Morooka S., Maeda H. Diamond Relat. Mater. 2000. Vol. 9, No. 2, P. 219-223.
- 265 Incorporation of butyl groups into chlorinated diamond surface carbons by organic reactions at ambient temperature. Saito T., Ikeda Y., Egawa S., Kusakabe K., Morooka S. J. Chem. Soc. Faraday Trans. 1998. Vol. 94, No. 7, P. 929-932.
- 266 Effect of gas desorption on the structure and properties of polycrystals sintered from nanometric diamond powders. Shulzhenko A.A., Bochechka A.A., Gargin V.G., Gontar A.G., Romanko L.A., Tkach V.N. Superhard Materials. 1998. No. 4, P. 46-52.
- 267 Laser-induced intracluster reactions of oxygen-containing nanodiamonds. Lin R.-W., Cheng C.-L., Chang H.-C. Chem. Mater. 1998. Vol. 10, No. 7, P. 1735 -1737.
- 268 Reaction of ultrafine diamond powder with titanium. Chiganov A.S., Chiganova G.A. Inorg. Mater. 1997. Vol. 33, No. 10, P. 1036-1038.
  - See also 172, 221, 246, 247, 248, 251, 254, 257, 261, 274, 277, 310, 314, 410, 411, 414, 415, 426, 429, 431, 434, 438

### > 05.03. Aggregation (assemblies) of nanodiamonds

- 269 Aggregation of particles in ultradispersed diamond hydrosols. Chiganova G.A. Colloid J. 2000. Vol. 62, No. 2, P. 238-243.
- 270 Shock-induced coalescence of diamond nanoparticles. Lin E.E. Izv. Akad. Nauk. Fiz. 2000. Vol. 64, No. 8, P. 1519-1521.
- 271 Ultradisperse diamond cluster aggregation studied by atomic force microscopy.
  Aleksenskii A.E., Osipov V.Yu., Dideikin A.T., Vul' A.Ya.,
  Adriaenssens G.J., Afanas'ev V.V. Techn. Phys. Lett. 2000. Vol. 26, No. 9,
  P. 819-821.

See also 190, 273, 274, 277, 279, 427

## > 05.04 Suspension of nanodiamonds

- 272 Formation and stabilization of nanodiamond suspensions in liquid media. Voznyakovskii A.P., Fujimura T., Dolmatov V.Yu., Veretennikova M.V. Superhard Materials. 2002. No. 6. // Формирование и стабилизация суспензий наноалмазов в жидких средах. Возняковский А.П., Фуджимура Т., Долматов В.Ю., Веретенникова М.В. Сверхтвердые материалы. 2002. № 6, С. 22-27.
- 273 Sedimentation stability of nanodiamond suspensions in aqueous media. **Bogatyreva G.P., Voloshin M.N., Shamraeva V.S.** Superhard Materials. 2002. No. 4. P. 52-57. // Седиментационная устойчивость суспензий наноалмаза в водных средах. **Богатырева Г.П., Волошин М.Н., Шамраева В.С.** Сверхтвердые материалы. 2002. № 4, C. 55-60.
- 274 Structure and sedimentation stability of suspensions of detonation-synthesized nanodiamonds in nonaqueous liquids. Voznyakovskii A.P., Klyubin V.V., Dolmatov V.Yu., Agibalova L.V. Superhard Materials. 2000. No. 2, P. 58-65. // Структура и седиментационная устойчивость суспензий наноалмазов детонационного синтеза в неводных жидких средах. Возняковский А.П., Клюбин В.В., Долматов В.Ю., Агибалова Л.В. Сверхтвердые материалы. 2000. № 2, С. 64-71.
- Nanophase films deposited from organic suspensions of ultradispersed diamond. Adrianova T.N., Zakharov A.A. Colloid J. 1999. Vol. 61, No. 3, P. 265-267.
- 276 Structure of suspensions of explosion-synthesized ultradispersed diamonds (nanodiamonds). Agibalova L.V., Voznyakovskii A.P., Dolmatov V.Yu., Klyubin V.V. Superhard Materials. 1998. No. 4, P. 79-87. // Структура суспензий ультрадисперсных алмазов взрывного синтеза (наноалмазов). Агибалова Л.В., Возняковский А.П., Долматов В.Ю., Клюбин В.В. Сверхтвердые материалы. 1998. № 4,С. 87-95.

- 277 The effect of particle hydration on the aggregation stability of ultradispersed diamond hydrosols **Chiganova G.A.** *Colloid J.* 1997. Vol. 59, No. 1, P. 87-89.
- 278 Studies on nanodiamond pastes. Guseva M.B., Babaev V.G., Hvostov V.V., Valiullova Z.Kh. Izv. Ross. Akad. Nauk. Fiz. 1994. Vol. 58, No. 1, P. 191-194. 
  // Исследования ультрадисперсных алмазных паст. Гусева М.Б., Бабаев В.Г., Хвостов В.В., Валиуллова З.Х. Изв. Акад. Наук, Сер. Физ. 1994. Т. 58, № 1, С. 191-194.
- 279 Sedimentation and reological studies of the fractal structure of ultradisperse diamond aggregates. Ignatchenko A.V., Smagina G.F., Solohina A.B., Besedina O.A., Idrisov I.G. Kolloidnyj Zhurnal. 1992. Vol. 54, No. 4, P. 55-58 (in Russian). // Исследование фрактальной структуры агрегатов ультрадисперсных алмазов методом седиментации и реологии. Игнатченко А.В., Смагина Г.Ф., Солохина А.Б., Беседина О.А., Идрисов И.Г. Коллоидный журнал. 1992. Т. 54, № 4, С. 55-58.
- 280 Aggregation of diamonds produced in explosion. Sakovich G.V., Gubarevich V.D., Badaev F.Z., Brylyakov P.M., Besedina O.A. Dokl. Akad. Nauk USSR. 1990. Vol. 310, No. 2, P. 402-404 (in Russian). // Агрегация алмазов, полученных из взрывчатых веществ. Сакович Г.В., Губаревич В.Д., Бадаев Ф.З., Брыляков П.М., Беседина О.А. Докл. АН СССР. 1990. Т. 310, № 2, С. 402-404.

See also 089, 211, 219, 269, 271, 275, 611, 614, 617, 624, 629

### ■ 05.04.01. Electrophoretic deposition of nanodiamonds

- 281 Theory of electrodeposition of diamond nanoparticles. Bilbro G.L. Diamond Relat. Mater. 2002. Vol. 11, P. 1572-1577.
- 282 Codeposition of nanodiamonds with chromium. Mandich N.V., Dennis J.K. Metal Finishing. 2001. Vol. 99, No. 6, P. 117-119.
- 283 Electrophoretic deposition of nano-sized diamond particles. **Affoune M., Prasad B.L.V., Sato H., Enoki T.** *Langmuir.* 2001. Vol. 17, No. 2, P. 547-551.
- 284 Electrophoresis of nanodiamond powder for cold cathode fabrication. Alimova A.N., Chubun N.N., Belobrov P.I., Detkov P.Y., Zhirnov V.V. J. Vac. Sci. Technol. B. 1999. Vol. 17, No. 2, P. 715-718.
- Surface properties of nanodiamond films deposited by electrophoresis on Si(100). Maillard-Schaller E., Kuettel O.M., Diederich L., Schlapbach L., Zhirnov V.V., Belobrov P.I. Diamond Relat. Mater. 1999. Vol. 8, P. 805-808.

# 06. Experimental methods for investigation of nanodiamonds

## > 06.01. X-ray diffraction

X-ray diffraction study on nanometric diamond obtained from detonation soot. Chen Q., Yun S.R., Huang F.L. Chin. J. Mater. Res. 1999. Vol. 13, No. 3, P. 317-319.

See also 180, 181, 183, 184, 204, 512

# > 06.02. Small angle X-ray scattering

287 Formation of fractal structures at explosion. Ershov A.P., Kupershtokh A.L. *Fiz. Goren. Vzryva.* 1991. Vol. 27, No. 2, P. 111-117 (in Russian). // Образоване фрактальных структур при взрыве. Ершов А.П., Куперштох А.Л. Физика горения и взрыва. 1991. Т. 27, № 26 С. 111-117.

See also 180, 183, 184, 204

### 06.03. Raman scattering

- 288 Nature of confinement of phonons in nanocrystalline CVD diamond. Arora A.K., Ravindran T.R., Reddy G.L.N., Sikder A.K., Misra D.S. Diamond. Relat. Mater. 2001. Vol. 10, No. 8, P. 1477-1485.
- 289 Raman scattering of ultrafine diamond obtained from detonation. Chen P.W., Yun S.R., Huang F.L. et al. Chin. J. High Pressure Phys. 1999. Vol. 13, No. 1. P. 59-63.
- 290 The Raman spectrum of amorphous diamond. Nugent K.W., Jamieson D.N., Prawer S. Diamond Relat. Mater. 1998. Vol. 7, No. 1, P. 106-110.
- 291 Nanocrystalline diamond: Effect of confinement, pressure, and heating on phonon modes. Lipp M.J., Baonza V.G., Evans W.J., Lorenzana H.E. Phys. Rev. B. 1997. Vol. 56, No. 10, P. 5978-5984.
- 292 Characterization of diamond thin films by core-level photoabsorption and UV excitation Raman spectroscopy. Zuiker C.D., Krauss A.R., Gruen D.M., Carlisle J.A., Terminello L.J., Asher S.A., Bormett R.W. Mat. Res. Soc. Symp. Proc. 1996. Vol. 437, P. 211-218.

- 293 Raman scattering of light in small crystals. Gorelik V.S., Igo A.V., Mikov S.N. J. Exper. Theor. Phys. 1996. Vol. 82, No. 6, P. 1154-1158.
- 294 Raman scattering from diamond particles. Yoshikawa M., Mori Y., Maegawa M., Katagiri G., Ishida H., Ishitani A. Appl. Phys. Lett. 1993. Vol. 62, No. 24, P. 3114-3116.
- 295 Raman scattering from sp2 carbon clusters. Yoshikawa M., Nagai N., Matsuki M., Fukuda H., Katagiri G., Ishida H., Ishitani A. Phys. Rev. B. 1992, Vol. 46, No. 11, P. 7169-7174.

See also 205, 211, 214, 224, 225, 349, 362, 547, 548, 560

### > 06.04. Electron microscopy

- 296 Single-particle mass spectrometry of polystyrene microspheres and diamond nanocrystals. Cai Y., Peng W.-P., Kuo S.-J., Lee Y.T., Chang H.-C. Anal. Chem. 2002. Vol. 74, No. 1, P. 232-238.
- 297 Analysis of nanocrystalline diamond powder by scanning transmission electron microscopy. Peng J.L., Fehlhaber R.P., Bursill L.A., McCulloch D.G. J. Appl. Phys. 2001. Vol. 89, No. 11, P. 6204-6213.
- 298 TEM and HREM studies on ultradispersed diamonds containing soot formed by explosive detonation. Tao X., Kang X., Jiazheng Z. Mater. Sci. Eng. B. 1996. Vol. 38, No. 1-2, P. L1-L4.
- 299 Characterization of diamond thin films using transmission electron microscopy. Csencsits R., Gruen D.M., Krauss A.R., Zuiker C. SPIE. 1995. Vol. 2622, P. 405-406.

See also 376, 515, 517, 594

### > 06.05. Other methods for characterization of nanodiamonds

- 300 Electron spectroscopy characterization of carbon surfaces. Dementjev P. New Diamond Front. Carbon Technol. 2001. Vol. 11, No. 1, P. 37-51.
- 301 Methods of research of the detonation and shock wave processes with the help of SR. Possibilities and prospects. Aleshaev A.N., Batrakov A.M., Fedotov M.G., Kulipanov G.N., Luckjanchikov L.A., Ljachov N.Z., Mishnev S.I., Sheromov M.A., Ten K.A., Titov V.M., Tolochko B.P., Zubkov P.I. Nucl. Instrum. Methods A. 2001. Vol. 470, P. 240-244.

- 302 X-ray emission studies of valence band of nanodiamonds annealed at different temperatures. Okotrub A.V., Bulusheva L.G., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Heggie M.I. J. Chem. Phys. A. 2001. Vol. 105, P. 9781-9787.
- 303 <sup>13</sup>C NMR characterization of nanodiamonds. **Donnet J.-B., Fousson E., Delmotte L., Samirant M., Baras C., Wang T.K., Eckhardt A.** Comptes Rendus de l'Académie des Sciences Series IIC Chemistry. 2000. Vol. 3, No. 11-12. P. 831-838.
- Photoacoustic spectroscopy of diamond powders and polycrystalline films. Obraztsov A.N, Okushi X, Vatanabe X., Pavlovsky I.Yu. Fizika Tverdogo Tela. 1997. Vol. 39, No. 10, P. 1787-1791. // Фотоакустическая спектроскопия алмазных порошков и поликристаплических пленок. Образцов А.Н, Окуши X, Ватанабе X., Павловский И.Ю. Физика Твердого Тела. 1997. Т. 39, No. 10, C. 1787-1791.
- 305 Characterization of nanocrystalline diamond films by core-level photoabsorption. Gruen D.M., Krauss A.R., Zuiker C.D., Csencsits R., Terminello L.J., Carlisle J.A., Jimenez I., Sutherland D.G.J., Shuh D.K., Tong W., Himpsel F. J. Appl. Phys. Lett. 1996. Vol. 68, No. 12, P. 1640-1642.
- Near-edge x-ray absorption of carbon materials for determining bond hybridization in mixed sp2/sp3 bonded materials Coffman F.L., Cao R., Pianetta P.A., Kapoor S., Kelly M., Terminello L.J. Appl. Phys. Lett. 1996. Vol. 69, P. 568-579.
- 307 NMR spectroscopy of diamond-like phase of carbon of detonation synthesis. Mastikhin V.M., Vereshchagin A.L. Superdisperse Powders, Materials, and Nanostructures, Krasnoyarsk: 1996. P. 37-38.
- 308 Diffuse reflectance infrared Fourier-transform study of the direct thermal fluorination of diamond powder surfaces. Ando T., Yamamoto K., Kamo M., Sato Y., Takamatsu Y. J. Chem. Soc. Faraday Trans. 1995. Vol. 91, No. 18, P. 3209-3212.

See also 019, 092, 172, 181, 188, 209, 210, 215, 217, 220, 228, 231, 236, 238, 241, 242, 248, 271, 279, 313, 316, 321, 349, 356, 358, 390, 396, 432, 518, 540, 545, 580, 587

# 0.7 Impurities and structural defects in nanodiamonds

- 309 Dopants in diamond nanoparticles and bulk diamond density functional study of substitutional B, N, P, SB, S, PN, O, NN, and interstitial H. Albu T.V., Anderson A.B., Angus J.C. J. Electrochem. Soc. 2002. Vol. 149, No. 5, P. E143-E147.
- Grain-size distribution of activated and metal-coated ultradispersed diamond powders. **Duda T.M., Tkach V.N., Kuzmenko E.F.** Superhard Materials. 2001. No. 4, P. 57-61. // Зерновой состав активированных и металлизированных ультрадисперсных алмазных порошков. Дуда Т.М., Ткач В.Н., Кузьменко **Е.Ф.** Сверхтвердые материалы. 2001. № 4, C. 63-67.
- Molecular dynamics simulation of impurities in nanocrystalline diamond grain boundaries. Sternberg M., Zapol P., Frauenheim T., Gruen D.M., Curtiss L.A. Mat. Res. Soc. Symp. Proc. 2000. Vol. 593, P. 483-487.
- 312 First-principles study of π-bonded (100) planar defects in diamond. Zapol P., Curtiss L.A., Gruen D.M. Mat. Res. Soc. Symp. Proc. 1999. Vol. 538, P. 371-376.
- 313 Study of defects in CVD and ultradisperse diamond. Iakoubovskii K., Adriaenssens G.J., Meykens K., Nesladek M., Vul' A.Y., Osipov V.Y. Diam. Rel. Mater. 1999. Vol. 8, No. 8-9, P. 1476-1479.
- 314 Formation of the surface composition of nanometric diamond. Smekhnov A.A. Superhard Materials. 1998. No. 1, P. 29-33. // Формирование состава поверхности ультрадисперсных алмазов. Смехнов А.А. Сверхтвердые материалы. 1998. № 1, С. 33.
- On possible doping of ultradisperse diamonds. Lin E.E., Dubitskii G.A., Zul'kova T.V., Mazanov V.A., Sirenko A.V., Suharenko V.I. Khim. Fizika. 1997. Vol. 16, No. 3, P. 142-143 (in Russian). // О возможности легирования ультрадисперсных алмазов. Лин Э.Э., Дубицкий Г.А., Зюлькова Т.В., Мазанов В.А., Сиренко А.В., Сухаренко В.И. Химическая физика. 1997. Т. 16, № 3, С. 142-143.
- 316 Use of the technique of chemical decomposition in analyzing the impurity distribution in ultrafine diamonds. Chiganova G.A. J. Anal. Chem. (Transl. of Zh. Anal. Khim.) 1995. Vol. 50, No. 12, P. 1195-1197.
- 317 Study of the impurity composition of ultradisperse diamond. Gubarevich T.M., Kostyukova N.M., Sataeva R.R., Fomina L.V. Superhard Materials. 1991. P. 31-34. // Исследование микропримесного No. 5, состава ультрадисперсного алмаза. Губаревич T.M., Костюкова H.M., Сатаев Р.Р., Фомина Л.В. Сверхтвердые материалы. 1991. No. 5, C. 31-34.

Sec also 075, 141, 154, 181, 218, 221, 248, 253, 256, 267, 268, 350, 351, 390, 414, 549, 580, 587, 637

### > 0.8 Nanodiamond films by CVD

- Elastic, mechanical, and thermal properties of nanocrystalline diamond films. Philip J., Hess P., Feygelson T., Butler J.E., Chattopadhyay S., Chen K.H., Chen L.C. J. Appl. Phys. 2003. Vol. 93, No. 4, P. 2164-2171.
- 319 Nanodiamond thin film electrodes: Metal electro-deposition and stripping processes, Hian L.C., Grehan K.J., Goeting C.H., Compton R.G., Foord J.S., Marken F. *Electroanalysis*. 2003. Vol. 15, No. 3, P. 169-174.
- 320 Nanodiamond thin films on titanium substrates. Hian L.C., Grehan K.J., Compton R.G., Foord J.S., Marken F. J. Electrochem. Soc. 2003. Vol. 150, No. 1, P. E59-E65.
- 321 Optical properties of nanocrystalline diamond films by prism coupling technique. **Sharda T., Soga T., Jimbo T.** *J. Appl. Phys.* 2003. Vol. 93, No. 1, P. 101-105.
- 322 Synthesis and characterization of sulfur-incorporated microcrystalline diamond and nanocrystalline carbon thin films by hot filament chemical vapor deposition. **Gupta S., Weiner B.R., Morell G.** *J. Mater. Res.* 2003. Vol. 18, No. 2, P. 363-381.
- 323 Allotropic conversion of carbon-related films by using energy beams. Naramoto H., Zhu X., Xu Y., Narumi K., Vacik J., Yamamoto S., Miyashita K. Phys. Solid State. 2002. Vol. 44, No. 4, P. 668-673.
- 324 Formation of diamond and nanocrystalline diamond films by microwave plasma CVD. **Hiramatsu M., Lau C.H., Bennett A., Foord J.S.** *Thin Sol. Films.* 2002. Vol. 407, No. 1-2, P. 18-25.
- 325 Growth and electron field emission characteristics of nanodiamond films deposited in N<sub>2</sub>/CH<sub>4</sub>/H<sub>2</sub> microwave plasma-enhanced chemical vapor deposition. Wang S.G., Zhang Q., Yoon S.F., Ahn J., Wang Q., Zhou Q., Yang D.J. J. Vac. Sci. Techn. B. 2002. Vol. 20, No. 5, P. 1982-1986.
- 326 Highly transparent nanocrystalline diamond films on quartz substrates. Qiu D.J., Shi C.R., Wu H.Z. Acta Phys. Sin.-Ch. Ed. 2002. Vol. 51, No. 8, P. 1870-1874.
- 327 Influence of cluster-assembly parameters on the field emission properties of nanostructured carbon films. **Ducati C., Barborini E., Piseri P., Milani P., Robertson J.** *J. Appl. Phys.* 2002. Vol. 92, No. 9, P. 5482-5489.
- 328 Influence of nitrogen ion implantation on tribological properties of nanocrystalline diamond films. Xu T., Yang S.R., Chen M., Tian J., Xue Q.J., Li J.Q., Guo W.T. J. Phys. D Appl. Phys. 2002. Vol. 35, No. 8, P. 788-793.
- 329 Investigations of the electron field emission properties and microstructure correlation in sulfur-incorporated nanocrystalline carbon thin films **Gupta S.**, **Weiner B.R.**, **Morell G.** *J. Appl. Phys.* 2002. Vol. 91, No. 12, P. 10088-10097.

- 330 Microstructure and stress in nano-crystalline diamond films deposited by DC glow discharge CVD. Heiman A., Lakin E., Zolotoyabko E., Hoffman A. Diamond Relat. Mater. 2002. Vol. 11, No. 3-6, P. 601-607.
- 331 Morphology and electronic structure in nitrogen-doped ultrananocrystalline diamond. Birrell J., Carlisle J.A., Auciello O., Gruen D.M., Gibson J.M. Appl. Phys. Lett. 2002. Vol. 81, No. 12, P. 2235-2237.
- 332 Nanocrystalline diamond thin films deposited by 35 kHz Ar-rich plasmas. Lopez J.M., Gordillo-Vazquez F.J., Albella J.M. Appl. Surf. Sci. 2002. Vol. 185, P. 321-325.
- Nanocrystalline diamond thin films as infrared optical protective coatings. Li J.Q., He D.Y., Guo W.T., Zhang J.H., Sun Y.N., Lei Q.S., Gao X. Int. J. Mod. Phys B. 2002. Vol. 16, No. 6-7, P. 1013-1017.
- Nanodiamond formation by hot-filament chemical vapor deposition on carbon ions bombarded Si. Liao M.Y., Meng X.M., Zhou X.T., Hu J.Q., Wang Z.G. J. Cryst. Growth. 2002. Vol. 236, No. 1-3, P. 85-89.
- 335 Substrate bias effect on the formation of nanocrystalline diamond films by microwave plasma-enhanced chemical vapor deposition. Yang T.S., Lai J.Y., Wong M.S., Cheng C.L. J. Appl. Phys. 2002. Vol. 92, No. 4, P. 2133-2138.
- 336 Synthesis and structural study of nano/micro diamond overlayer films. Jiang N., Sugimoto K., Nishimura K., Shintani Y., Hiraki A. J. Cryst. Growth. 2002, Vol. 242, No. 3-4, P. 362-366.
- 337 Synthesis of nanocrystalline diamond film using CH<sub>4</sub>/H<sub>2</sub> microwave plasma. Hong S.P., Yoshikawa H., Koga Y. New Diamond Front. Carbon Technol. 2002. Vol. 12, No. 3, P. 129-132.
- 338 The effect of nitrogen addition to Ar/CH<sub>4</sub> plasmas on the growth, morphology and field emission of ultrananocrystalline diamond. Corrigan T.D., Gruen D.M., Krauss A.R., Zapol P., Chang R.P.H. Diamond Relat. Mater. 2002, Vol. 11, P. 43-48.
- Electron field emission for ultrananocrystalline diamond films. Krauss R., Auciello O., Ding M.Q., Gruen D.M., Huang Y., Zhirnov V.V., Givargizov E.I., Breskin A., Chechen R., Shefer E., Konov V., Pimenov S., Karabutov A., Rakhimov A., Suetin N. J. Appl. Phys. 2001. Vol. 89, P. 2958-2067.
- Electron field emission from nanostructured diamond and carbon nanotubes. **Zhu W., Bower C., Kochanski G.P., Jin S.** Sol. State Electron. 2001. Vol. 45, No. 6, P. 921-928.
- 341 Electron field emission properties of nanodiamonds synthesized by the chemical vapor deposition process. Yu Y.-C., Huang J.-H., Lin I-N. J. Vac. Sci. Technol. B. 2001. Vol. 19, P. 975-979.

- 342 Evolution and properties of nanodiamond films deposited by direct current glow discharge. Heiman A., Gouzman I., Christiansen S.H., Strunk H.P., Comtet G., Hellner L., Dujardin G., Edrei R., Hoffman A. J. Appl. Phys. 2001, Vol. 89, No. 5, P. 2622-2630.
- Field emission from nanostructured carbon films on Si tips. Wang W.-L., Liao K.-J., Hu Ch.-G., Fang L. Chin. Phys. Letters. 2001. Vol. 18, P. 1132-1134.
- 344 Growth of highly transparent nanocrystalline diamond films and a spectroscopic study of the growth. Chen L.C., Kichambare P D., Chen K.H., Wu J.-J., Yang J.R., Lin S.T. J. Appl. Phys. 2001. Vol. 89, No. 1, P. 753-759.
- 345 Mechanism of nanodiamond film formation by stress relaxation on a preferentially oriented vertical basal plane graphitic precursor. Hoffman A., Heiman A., Christiansen S.H. J. Appl. Phys. 2001. Vol. 89, No. 10, P. 5769-5773.
- 346 Microstructure of ultrananocrystalline diamond films grown by microwave Ar-CH<sub>4</sub> plasma chemical vapor deposition with or without added H<sub>2</sub>. Jiao S., Sumant A., Kirk M.A., Gruen D.M., Krauss A.R., Auciello O. J. Appl. Phys. 2001. Vol. 90, P. 118-122.
- 347 Nitrogen-doped ultrananocrystalline diamond films exhibit high room-temperature n-type conductivity. Sosa S.S. MRS. Bull. 2001. Vol. 26, No. 9, P. 659-659.
- Phase transformation of diamond films during electron field emission. Sun Z., Chen J.S., Li Y.J., Tay B.K., Lau S.P., Chen G.Y. Appl. Surf. Sci. 2001. Vol. 173, No. 3-4, P. 282-289.
- 349 Raman and EELS studies on nanocrystalline diamond prepared in a low pressure inductively coupled plasma. Okada K., Kimoto K., Komatsu S., Matsumoto S. Mat. Res. Soc. Proc. 2001. Vol. 675, W12.7.1-6.
- 350 Synthesis and characterization of highly-conducting nitrogen-doped ultrananocrystalline diamond films. Bhattacharyya S., Auciello O., Birrell J., Carlisle J.A., Curtiss L.A., Goyette A.N., Gruen D.M., Krauss R., Schlueter J., Sumant A., Zapol P. Appl. Phys. Lett. 2001. Vol. 79, No. 10, P. 1441-1443.
- 351 The structure and electrochemical behavior of nitrogen-containing nanocrystalline diamond films deposited from CH<sub>4</sub>/N<sub>2</sub>/Ar mixtures. Chen Q., Gruen D.M., Krauss A.R., Corrigan T.D., Witck M., Swain G.M. J. Electrochem. Soc. 2001. Vol. 148, No. 1, P. E44-E51.
- 352 Ultracrystalline diamond in the laboratory and the cosmos. **Gruen D.M.** MRS Bulletin. 2001. Vol. 26, No. 20, P. 771-776.
- 353 Ultrananocrystalline diamond thin films for mems and moving mechanical assembly devices. Krauss R., Auciello O., Gruen D.M., Jayatissa A., Sumant A., Tucek J., Mancini D.C., Moldovan N., Erdemir A., Ersoy D., Gardos M.N., Busmann H.G., Meyer E.M., Ding M.Q. Diamond Related Mater. 2001. Vol. 10. P. 1952-1961.

- 354 Autoemission cathodes (cold emitters) on nanocrystalline carbon and nanodiamond films: physics, technology, applications. **Rakhimov T.** *Physics-Uspekhi*. 2000. Vol. 43, No. 9. P. 926-929. [English edition of *Usp. Fiz. Nauk*. 2000. Vol. 170. No. 9, P. 996-999].
- Diamond nucleation enhancement by direct low-energy ion-beam deposition. Zhang W.J., Sun X.S., Peng H.Y., Wang N., Lee C.S., Bello I., Lee S.T. Phys. Rev. B. 2000. Vol. 61, No. 8, P. 5579-5586.
- 356 Growth, characterization, optical and X-ray absorption studies of nanocrystalline diamond films. Chen L.C., Wang T.Y., Yang J.R., Chen K.H., Bhusari D.M., Chang Y.K., Hsieh H.H., Pong W.F. Diamond Relat. Mater. 2000. Vol. 9, No. 3-6, P. 877-882.
- 357 Nanostructured diamond film on etched silicon and its field emission behavior. Xu N.S., Chen J., Feng Y.T., Deng S.Z. J. Vac. Sci. Technol. B. 2000. Vol. 18, No. 2, P. 1048-1050.
- 358 Scanning tunneling microscope study of diamond films for electron field emission. Rakhimov T., Suetin N.V., Soldatov E.S., Timofeyev M.A., Trifonov A.S., Khanin V.V., Silzars A. J. Vac. Sci. Technol. B. 2000. Vol. 18, No. 1, P. 76-81.
- 359 Study of chemical vapor deposition diamond film evolution from a nanodiamond precursor by <sup>13</sup>C isotopic labeling and ion implantation. Gouzman I., Richter V., Rotter S., Hoffman A. J. Vac. Sci. Tech. A. 2000. Vol. 18, No. 6, P. 2997-3003.
- 360 Study of field electron emission from nanocrystalline diamond thin films grown from a N<sub>2</sub>/CH<sub>4</sub> microwave plasma. Xu N.S., Chen J., Deng S.Z. Wu K.H., Wang E.G. J. Phys. D: Appl. Phys. 2000. Vol. 33, P. 1572-1575.
- 361 The intrinsic relation between field electron emission and structure characteristics of amorphous diamond film. Xu N.S., Chen J., She J.C., Deng S.Z., Chen J. J. Phys. D: Appl. Phys. 2000. Vol. 33, P. 2568-2572.
- 362 UV Raman characteristics of nanocrystalline diamond films with different grain size. Sun Z., Shi J.R., Tay B.K., Lau S.P. Diamond Relat. Mater. 2000. Vol. 9, P. 1979-1983.
- 363 Ultrahard carbon nanocomposite films. Siegal M.P., Tallant D.R., Provencio P.N., Overmyer D.L., Simpson R.L., Martinez-Miranda L.J. Appl. Phys. Lett. 2000. Vol. 76, No. 21, P. 3052-3054.
- 364 Characterization of field emission cathodes with different forms of diamond coatings. Zhirnov V.V., Kuttel O.M., Groning O., Alimova A.N., Detkov P.Y., Belobrov P.I., Maillard-Schaller E., Schlapbach L. J. Vac. Sci. Technol. B. 1999. Vol. 17, No. 2, P. 666-669.
- 365 Nanocrystalline diamond coatings. Mitura S., Mitura A., Niedzielski P., Couvrat P. Chaos, Solitons, & Fractals. 1999. Vol. 10, No. 12, P. 2165-2176.

- Nanofilms produced from organic nanodiamond suspensions. Andrianova T.N., Zakharov A.A. Kolloidnyj Zhurnal. 1999. Vol. 61, No. 2, P. 1-4 (in Russian). // Нанофазные пленки, полученные из органических суспензий ультрадисперсного алмаза. Андрианова Т.Н., Захаров А.А. Коллоидный журнал. 1999. Т. 61, № 2. С. 1-4.
- 367 Theoretical studies on nanocrystalline diamond: nucleation by dicarbon and electronic structure of planar defects. Gruen D.M., Redfern P.C., Horner D.A., Zapol P., Curtiss L.A. J. Phys. Chem. B. 1999. Vol. 103, No. 26. P. 5459-5467.
- 368 Control of diamond film microstructure by Ar additions to CH<sub>4</sub>/H<sub>2</sub> microwave plasmas. Zhou D., Gruen D.M., Qin L.C., McCauley T.G., Krauss A.R. J. Appl. Phys. 1998. Vol. 84, No. 4. P. 1981-1989.
- 369 Diamond film deposition on carbon nanocomposites. Ralchenko V., Smolin A., Vlasov I., Karabutov A., Frolov V., Konov V. Gordeev S., Zukov S. Mol. Mater. 1998. Vol. 11. P. 143-148.
- 370 Generation of microwave plasma under high pressure and fabrication of ultrafine carbon particles. Yagi H., Ide T., Toyota H., Mori Y. J. Mater. Res. 1998. Vol. 13, No 6, P.1724-1727.
- 371 Low-field electron emission from undoped nanostructured diamond. Zhu W., Kochanski G.P., Jin S. Science. 1998. Vol. 282, P.1471-1473.
- Morphology and electron emission properties of nanocrystalline CVD diamond thin films. Krauss A.R., Gruen D.M., Zhou D., McCauley T.G., Qin L.-C., Corrigan T., Auciello O., Chang R.P.H. Mat. Res. Soc. Symp. Proc. 1998. Vol. 498, P. 299-310.
- 373 Nucleaton of nanocrystalline diamond by fragmentation of fullerene precursors. Gruen D.M., Curtiss L.A., Redfern P.C., Qin L.C. Electrochem. Soc. Proceed. 1998. Vol. 98, No. 8. P. 509-518.
- Synthesis of nanocrystalline diamond thin films from an Ar-CH<sub>4</sub> microwave plasma. **Zhou D., McCauley T.G., Qin L.C., Krauss A.R., Gruen D.M.** *J. Appl. Phys.* 1998. Vol. 83, No. 1, P. 540-543.
- 375 Spectroscopic determination of carbon dimer densities in Ar/H<sub>2</sub>/CH<sub>4</sub> and Ar/H<sub>2</sub>/C<sub>60</sub> plasmas. Goyette N., Lawler J.E., Anderson L.W., Gruen D.M., McCauley T.G., Zhou D., Krauss A.R. J. Phys. D: App. Phys. 1998. Vol. 31, P. 1975-1986.
- 376 TEM characterization of nanodiamond thin films. Qin L.C., Zhou D., Krauss A.R., Gruen D.M. Nanostruct. Mater. 1998. Vol. 10, No. 4, P.649-660.
- 377 Temperature dependence of the growth rate for nanocrystalline diamond films deposited from an Ar/CH<sub>4</sub> microwave plasma. McCauley T.G., Gruen D.M., Krauss A.R. Appl. Phys. Lett. 1998. Vol. 73, No. 12, P. 1646-1648.

- Field emission enhancement from Mo tip emitters coated with N containing amorphous diamond films Ding M.Q., Choi W.B., Myers A.F., Sharma A.K., Narayan J., Cuomo J.J., Hren J.J. Surf. Coat. Technol. 1997. Vol. 94-95, No. 1-3, P. 672-675.
- 379 Microstructure and field emission of nanocrystalline diamond prepared from C<sub>60</sub> precursors. Zhou D., Krauss A.R., Corrigan T.D., McCauley T.G., Chang R.P.H., Gruen D.M. J. Electrochem. Soc. 1997, Vol. 144, No. 8, P. L224-L228.
- 380 Synthesis and electron field emission of nanocrystalline diamond thin films grown from N<sub>2</sub>/CH<sub>4</sub> microwave plasmas. Zhou D., Krauss A.R., Qin L.C., McCauley T.G., Gruen D.M., Corrigan T.D., Chang R.P.H., Gnaser H. J. Appl. Phys. 1997. Vol. 82, No. 9, P. 4546-4550.
- 381 Effect of pretreatment process parameters on diamond nucleation on unscratched silicon substrates coated with amorphous carbon films. Feng Z., Komvopoulos K., Bogy D.B., Ager III J.W., Anders S., Anders A., Wang Z., Brown I.G. J. Appl. Phys. 1996. Vol. 79, No. 1, P. 485-492.
- 382 Formation of diamond nuclei under the growth of films and crystals from the gas phase. Rudenko A.P., Kulakova I.I. Diamond Relat. Mater. 1996. Vol. 5, P. 1070.
- 383 Grain boundaries and grain size distributions in nanocrystalline diamond films derived from fullerene precursors. Csencsits R., Zuiker C.D., Gruen D.M., Krauss A.R. Sol. State Phenom. 1996. Vol. 51-52, P. 261-270.
- 384 Hydrogen-related defects in polycrystalline CVD diamond. Zhou X., Watkins G.D., McNamara Rutledge K.M., Messmer R.P., Chawla S. Phys. Rev. B. 1996. Vol. 54. P. 7881-7890.
- 385 Carbon dimer, C<sub>2</sub>, as a growth species for diamond films from methane/hydrogen/argon microwave plasmas. **Gruen D.M.**, **Zuiker C.D.**, **Krauss A.R.**, **Pan X.** *J. Vac. Sci. Technol. A.* 1995. Vol. 13, No. 3, P. 1628-1632.
- 386 D.c. arc plasma deposition of smooth nanocrystalline diamond films. Konov V.I., Smolin A.A., Ralchenko V.G., Pimenov S.M., Obraztsova E.D., Loubnin E.N., Metev S.M., Sepold G. Diamond Relat. Mater. 1995. Vol. 4, P. 1073-1078.
- 387 Buckyball microwave plasmas: fragmentation and diamond-film growth. Gruen D.M., Liu S., Krauss A.R., Pan X. J. Appl. Phys. 1994. Vol. 75, No. 3, P. 1758-1763.
- Deposition and characterization of nanocrystalline diamond films. Gruen D.M., Pan X., Krauss A.R., Liu S., Luo J., Foster C.M. J. Vac. Sci. Technol. A, 1994. Vol. 12, No. 4, P. 1491-1495.
- Deposition of thin highly dispersive diamond films by laser ablation. Guseva M.B., Babaev V.G., Khvostov V.V., Valliulova Z.Kh. Bregagze A.Yu., Obraztsov A.N., Alexenko A.E. Diamond Relat. Mater. 1994. Vol. 3, No. 3, P. 328-331.

- 390 Mossbauer-effect measurement of the recoil-free fraction for Fe-57 implanted in a nanophase diamond film. Sinor T.W., Standifird J.D., Davanloo F., Taylor K.N., Hong C., Carroll J.J., Collins C.B. Appl Phys Lett. 1994. Vol. 64, No. 10, P. 1221-1223.
- 391 The microstructure of inclusions in nanocrystalline carbon-films deposited at low temperature. Silva S.R.P., Knowles K.M., Amaratunga G.A.J., Putnis A. Diamond Relat. Mater. 1994. Vol 3, No. 7, P. 1048-1055.
- 392 Thin diamond films obtained by laser evaporation of detonation soot.

  Obraztsov A.N. Villafranca Otero A.L., Guseva M.B., Babaev V.G.,

  Bregadze A.Yu., Khvostov V.V., Valliulova Z.Kh., Bouilov L.L. Diamond

  Films Technol. 1994. Vol. 4. No. 4, P. 233-241.

See also 025, 239, 288, 400

## 0.9 Applications of nanodiamonds of detonation synthesis

See also 046, 085, 607

# > 09.01. Nanodiamonds for seeding at CVD diamond films growth

- 393 Diamond films: initial CVD growth stage using nanodiamonds as nucleation centers. Vul' A.Ya., Golubev V.G., Grudinkin S.A., Kruger A., Naramoto H. Techn. Phys. Lett. 2002. Vol. 28, No. 9., P. 787-789.
- 394 Low-temperature (200°C) growth of diamond on nano-seeded substrate. **Hiraki A.** Appl. Surf. Sci. 2000. Vol. 162-163, P. 326-331.
- 395 CVD diamond film on the base paseted by ultrafine diamond. Chen Q., Zhai H.Z., Yun S.R., Zhu H.S. Chin. Sci. Bull. 1999. Vol. 44, No. 1, P. 36-41.
- 396 Nano-particles seeding and its characterization by X-ray photoelectron spectroscopy (XPS). Eliyahu A., Buehler J., Ben-Chorin M., Cohen H., Prior Y. Diamond Relat. Mater., 1999. Vol. 8, P.146-149.
- 397 Enhanced nucleation and growth of diamond thin films using a nanodiamond monolayer. Guerin D., Ismat Shah S. J. Mater. Sci. Letters. 1997. Vol. 16, P. 476-478.
- 398 Ultrahigh particle density seeding with nanocrystal diamond particles. Makita H., Nishimura K., Jiang N., Hatta A., Ito T., Hiraki A. Thin Solid Films. 1996. Vol. 281-282, P.279-281.
- 399 Low temperature fabrication of diamond films with nanocrystal seeding. Yara T., Makita H., Hatta A., Ito T., Hiraki A. Jpn. J. Appl. Phys. 1995. Vol. 34, P. 312-315.
- 400 Optical monitoring of nucleation and growth of diamond films. Smolin A.A., Ralchenko V.G., Pimenov S.M., Kononenko T.V., Loubnin E.N. Appl. Phys. Lett. 1993. Vol. 62, No. 26, P. 3449-3451.

See also 275, 359

# > 09.02. Nanodiamonds for electroplating and chemical coatings

401 Preparation of wear-resistant chromium coatings using variously synthesized nanodiamonds. Dolmatov V.Yu., Fujimura T., Burkat G.K., Orlova E.A. Superhard Materials. 2002. No. 6. // Получение износостойких хромовых покрытий с применением наноалмазов различной природы. Долматов В.Ю., Фуджимура Т., Буркат Г.К., Орлова Е.А. Сверхтвердые материалы. 2002. № 6, С. 16-21.

- 402 Preparation and properties of electrochemical composite coatings of precious and nonferrous metals with ultradispersed detonation-synthesized diamonds. Dolmatov V.Yu., Burkat G K., Saburbaev V.Yu., Salko A.E., Veretennikova M.V. Superhard Materials. 2001. No. 2, P. 49-55. // Получение и свойства электрохимических композиционных покрытий благородными и цветными металлами с ультрадисперсными алмазами детонационного синтеза. Долматов В.Ю., Буркат Г.К., Сабурбаев В.Ю., Салько А.Е., Веретенникова М.В. Сверхтвердые материалы. 2001. № 2, С. 52-57.
- 403 Detonation-synthesized ultradispersed diamonds as a basis of a new class of composite metal-diamond electroplated coatings. Dolmatov V.Yu., Burkat G.K. Superhard Materials. 2000. No. 1, P. 78-86. // Долматов В.Ю., Буркат Г.К. Ультрадисперсные алмазы детонационного синтеза как основа нового класса композиционных металл-алмазных гальванических покрытий. Сверхтвердые материалы. 2000. № 1, C. 84-95.
- 404 Grain boundaries and mechanical properties of nanocrystalline diamond films. Busmann H.-G., Pageler A., Brauneck U., Gruen D.M. J. Metastable and Nanocrystalline Mat. 2000, Vol. 8, P. 255-260.
- 405 Electroplating of gold-nanodiamond composite coatings. Loubnin E.N., Pimenov S.M., Blatter A., Schwager F., Detkov P.Ya. New Diamond Front. Carbon Technol. 1999. Vol. 9, No. 4, P. 273.
- 406 Integral and local field emission analyses of nanodiamond coatings for power applications. Göhl A., Alimova A.N., Habermann T., Mescheryakova A.L., Nau D., Zhirnov V.V., Mueller G. J. Vac. Sci. Technol. B. 1999. Vol. 17, No. 2, P. 670-673.
- The influence of ultradisperse diamond-like particles on the microstructure of 407 electroplated chromium coatings. Vereschagin A.L., Zolotuhina I.I., Brylyakov P.M., Gubarevich V.D., Chernyh S.A., Bychin N.V., Komarov V.F. Superhard Materials. 1991. No. 1, P. 46-49. // Влияние ультрадисперсных частиц алмазоподобной фазы углерода микроструктуру электроосажденного хромового Верещагин А.Л., Золотухина И.И., Брыляков П.М., Губаревич В.Д., Черных С.А., Бычин Н.В., Комаров В.Ф. Сверхтвёрдые материалы. 1991. № 1, C. 46-49.

See also 282, 284

### > 09.03. Composites based on nanodiamonds

408 Carbon nanocomposite materials of nanodiamonds: production and properties. Gordeev S.K. Superhard Materials. 2002. No. 6. // Углеродные нанокомпозиционные материалы из наноалмаза: получение и свойства. Гордеев С.К. Сверхтвердые материалы. 2002. № 6, С. 60-67.

- 409 Mechanical behavior and microstructure of nanodiamond-based composite materials. Ekimov E.A., Palosz B., Gierlotka S., Lojkowski W., Kozubowski J.A., Gromnitskaya E.L., Naletov A.M., Swiderska-Sroda A. J. Mater. Sci. Letters. 2002. Vol. 21. No. 21, P. 1699.
- 410 The effect of modifying nanodiamond admixtures on the reological characteristics of polyisoprene composites. Tsypkina I.M., Voznyakovskij A.P. Materialy konferencii "Novye tehnologii v khimicheskoj promyshlennosti" November 20-22, 2002. Minsk: BGTU. 2002. Pt. 1, P. 15-18. // Влияние модифицирующих добавок алмазосодержащего наноуглерода на реологические свойства композитов на основе полиизопренов. Цыпкина И.М., Возняковский А.П. Материалы конференции "Новые технологии в химической промышленности" 20-22 ноября 2002 г., Минск: БГТУ. 2002. Ч. 1, С. 15-18.
- 411 Multipurpose high-strength polymer-diamond film coatings. Voznyakovskij A.P., Fujimura T., Sokolov Yu.P., Dolmatov V.Yu. Materialy 2-j Mezhdunarodnoj nauchno-tehnicheskoj konferencii "Inzheneriya poverhnosti i renovatsiya izdelij". 28-30 May, Yalta, Ukraina, 2002, Kiev: 2002. P. 23-25. // Многофункциональные прочные протекторные полимералмазные пленочные покрытия. Возняковский А.П., Фуджимура Т., Соколов Ю.П., Долматов В.Ю. Материалы 2-й Международной научнотехнической конференции "Инженерия поверхности и реновация изделий". 28-30 мая Ялта, Украина, 2002 г. Киев: 2002. С. 23-25.
- 412 Properties of polycrystals high-pressure sintered from diamond powders produced by detonation and static syntheses. **Bochechka A.A.** Superhard Materials. 2002. No. 6. // Свойства поликристаллов, спеченных при высоких давлениях из алмазных нанопорошков детонационного и статического синтеза. **Бочечка А.А.** Сверхтвердые материалы. 2002. № 6, С. 37-42.
- 413 Rheological modeling and fracture of hard oxide ceramics modified by ultradispersed diamond nanoparticles. **Kireitseu M.** *Particulate Sci. Tech.* 2002. Vol. 20, No. 3, P. 209-223.
- 414 Some peculiarities of preparation and physico-mechanical properties of diamond grits plated with chemical composite coatings containing ultradispersed diamonds. Duda T.M., Nikitin Yu.I., Poltoratskiy V.G., Khripkova L.D., Shamrayeva V.S., Nesterenko T.M.. Superhard Materials. 2002. No. 5, P. 79-84. // Некоторые особенности получения и физико-механические свойства алмазных порошков, металлизированных композиционными химическими покрытиями с включением УДА. Дуда Т.М., Никитин Ю.И., Полторацкий В.Г., Хрипкова Л.Д., Шамраева В.С., Нестеренко Т.М. Сверхтвердые материалы. 2002. № 5, С. 88-94.

- 415 Modification of polymers using detonation-synthesized ultradispersed diamonds (nanodiamonds). Dolmatov V.Yu., Voznyakovskii A.P., Veretennikova M.V. Superhard Materials. 2001. No. 6, P. 75-78. // Модификация полимеров ультрадисперсными алмазами детонационного синтеза (наноалмазами). Долматов В.Ю., Возняковский А.П., Веретенникова М.В. Сверхтвердые материалы. 2001. № 6, C. 81-85.
- 416 Nanoporous and nanofragmental carbon composite materials. Gordeev S. In: Nanostructured Carbon for Advanced Applications. Eds. Benedek G. et al. Kluwer Academic Pub.: 2001. P. 71-88.
- 417 Novel solid nano diamond/pyrocarbon semiconductor materials. Gordeev S.K., Belobrov P.I., Kiselev N.I., Petrakovskaya E.A., Ekstrom T.C. Mat. Res. Soc. Symp. Proc. Microcrystalline and Nanocrystalline Semiconductors. 2001. Vol. 638. F18.4.1-6.
- 418 Sintering of statically synthesized diamond nanopowders and properties of polycrystals made of them. Shulzhenko A.A., Bochechka A.A., Oleinik G.S., Gargin V.G., Romanko L.A., Belyavina N.N., Dub S.N., Rogov V.V. Superhard Materials. 2001. No. 5, P. 28-36. // Спекание алмазного нанопорошка статического синтеза и свойства поликристаллов на его основе. Шульженко А.А., Бочечка А.А., Олейник Г.С., Гаргин В. Г., Романко Л.А., Белявина Н.Н., Дуб С.Н., Рогов В.В. Сверхтвердые материалы. 2001. № 5, С. 29-37.
- 419 High-pressure, high-temperature synthesis of SiC-diamond nanocrystalline ceramics. Ekimov A.G., Gavriliuk B., Palosz S., Gierlotka P., Dluzewski E., Tatianin Yu., Kluev A., Naletov M., Presz A. Appl. Phys. Lett. 2000. Vol. 77, P. 954-956.
- 420 The use of diamond nanopowders to strengthen a diamond–SiC composite material. Shulzhenko A.A., Gargin V.G., Bochechka A.A., Oleinik G.S., Danilenko N.V. Superhard Materials. 2000. No. 3, P. 1-13. // Применение алмазных нанопорошков для увеличения прочности композита на основе алмаза и карбида кремния. Шульженко А.А., Гаргин В.Г., Бочечка А.А., Олейник Г.С., Даниленко Н.В. Сверхтвердые материалы. 2000. № 3, С. 3-15.
- 421 Thermal properties of diamond/carbon composites. Vlasov A.V., Ralchenko V.G., Gordeev S.K., Zakharov D.N., Vlasov I.I., Karabutov A.V., Belobrov P.I. Diamond Relat. Mater. 2000. Vol. 9, P. 1104 - 1109.
- 422 Diamond/carbon nanocomposites: applications for diamond film deposition and field electron emission. Ralchenko V., Karabutov A., Vlasov I., Frolov V., Konov V., Gordeev S., Zhukov S., Dementjev A. Diamond Relat. Mater. 1999. Vol. 8-9, P. 1496-1501.

- 423 The production and properties of nickel composite coatings with nanodiamonds. Toropov A.D., Detkov P.Ya., Chukhaeva S.I. Gal'vanotehnika i obrabotka poverhnosti. 1999. P. 14-19 (in Russian). // Получение и свойства композицищных никелевых покрытий с ультрадисперсными алмазами. Торопов А.Д., Детков П.Я., Чухаева С.И. Гальванотехника и обработка поверхности. 1999. C. 14-19.
- 424 Ultradisperse diamonds as a basis for a new class of composites. **Dolmatov V.Yu., Zhirkevich V.Yu., Postnov V.N.** *Mehanika Kompozitsionnyh Materialov i Konstruktsij.* 1999. Vol. 5, No. 2, P. 41-47 (in Russian). // Ультрадисперсные алмазы как основа нового класса композиционных материалов. Долматов В.Ю., Жиркевич В.Ю., Постнов В.Н. *Механика композиционных материалов и конструкций.* 1999. Т. 5, № 2, С. 41-47.
- 425 Evolution of the structure of a compact during high-pressure sintering of nanodispersed diamonds. Danilenko V.V., Petrusha I.A., Oleinik G.S., Danilenko N.V. Superhard Materials. 1998. No. 4. P. 49-56. // Эволюция структуры компакта при спекании нанодисперсных алмазов в условиях высоких давлений. Даниленко В.В., Петруша И.А., Олейник Г.С., Даниленко Н.В. Сверхтвердые материалы. 1998. № 4, С. 53-61.
- 426 Effect of desorbed gases on high-pressure sintering of diamond powders **Bochechka A.A.** Superhard Materials. 1998. No. 4, P. 8-13. // Влияние десорбированных газов на спекание алмазных порошков под действием высокого давления. **Бочечка А.А.** Сверхтвердые материалы. 1998. № 4, C. 10-16.
- 427 Peculiarities of high pressure-high temperature compacting of ultradispersed diamond powders. Zvonarev E.V., Senyut V.T., Starchenko I.M., Finskaya V.M. Superhard Materials. 1998. No. 4, P. 38-42. // Особености компактирования УДА-порошков в условиях высоких давлений и температур. Звонарев Е.В., Сенють В.Т., Старченко И.М., Финская В.М. Сверхтвердые материалы. 1998. № 4, С. 41-46.
- 428 Structure of polycrystals sintered from explosion-synthesized diamond powders. **Britun V.F., Kurdyumov A.V.** Superhard Materials. 1998. No. 4, P. 33-37. // Структура поликристаллов, полученных спеканием алмазных порошков динамического синтеза. **Бритун В.Ф., Курдюмов А.В.** Сверхтвердые материалы. 1998. № 4, C. 36-41.
- 429 The interaction of rubbers with detonation diamond-like carbon. Voznyakovskij A.P., Ramsh A.S., Dolmatov V.Yu., Kovalev N.F., Bodrova V.S., Shelohneva L.F. Kauchuk i Rezina 1998. No. 1, P. 6-10 (in Russian). // Исследование взаимодействия каучуков с техническим алмазным углеродом взрывного синтеза. Возняковский А.П., Рамш А.С., Долматов В.Ю., Ковалев Н.Ф., Бодрова В.С., Шелохнева Л.Ф. Каучук и резина. 1998. № 1. С. 6-10.

- 430 Advanced composite materials. Gordeev S.K. In: Diamond Based Composites and Related Materials. Eds. Prelas M.A., Benedictus A., Lin L.T.S., Popovici G., Gielisse P. Kluwer Academic Pub.: 1997. P. 1-11.
- 431 A technology of saturated polymer composites with detonation nanodiamonds. Voznyakovskij A.P., Dolmatov V.Yu. Doklady Mezhdunarodnoj konferenciji "Fundamental'nye problemy nauki o polimerax" Moskow, January 21-23, 1997. P. 3-18 (in Russian). // Особенности получения высоконаполненных полимерных композитов наноалмазами взрывного Возняковский А.П., Долматов В.Ю. Доклады Международной конференции "Фундаментальные проблемы науки о полимерах" Москва. 21-23 января 1997, С. 3-18.
- 432 Atomic force microscopy investigations on the surface topographies of aluminum-based composite containing nanocluster diamonds. Ouyang Q., Wang B., Okada K. J. Vac. Sci. Technol. B. 1997. Vol. 15, No. 4, P. 1449.
- 433 Hot pressing of nanodiamond powder. Popovici G., Prelas M.A., Golshani F., Han P., Huggins K.E. In: Diamond Based Composites and Related Materials. Eds. Prelas M.A., Benedictus A., Lin L.-T.S., Popovici G., Gielisse P. Kluwer Academic Pub.: 1997. P. 31-38.
- Perspective applications of technological diamonds for re-inforcement of isoprene rubbers. Voznyakovskij A.P., Shelohneva L.F., Dolmatov V.Yu., Bodrova V.S. Kauchuk i Rezina. 1996. No. 6. P. 27-30 (in Russian). // Перспектива использования технического алмазного углерода взрывного синтеза для усиления изопреновых каучуков. Возняковский А.П., Шелохнева Л.Ф., Долматов В.Ю., Бодрова В.С. Каучук и резина. 1996. № 6, С. 27-30.
- 435 Composite materials: nanodiamond-pyrocarbon. Gordeev S.K., Zhukov S.G., Nikitin Yu.I., Poltoratsikij V.G. Neorganicheskie materialy. 1995. Т. 31, No. 4, Р. 470-474. // Композиционные материалы: ультрадисперсные алмазы пироуглерод. Гордеев С.К., Жуков С.Г., Никитин Ю.И., Полторацикий В.Г. Неорганические материалы. 1995. Т. 31, № 4, С. 470-474.
- 436 Dynamical compacting of ultradisperse diamond. Lin E.E., Novikov S.A., Kuropatkin V.G., Medvedkin V.A., Suharenko V.I. Fiz. Goren. Vzryva. 1995. Vol. 31, No. 5. P. 136-138 (in Russian). // Динамическое компактирование ультрадисперсных алмазов Лин Э.Э., Новиков С.А., Куропаткин В.Г., Медведкин В.А., Сухаренко В.И. Физика горения и взрыва. 1995. Т. 31, № 5, С. 136-138.
- 437 Preparation of ultradisperse diamonds pyrolytic carbon composite materials. Gordeev S.K., Zhukov S.G., Nikitin Y.I., Poltoratskii V.G. Inorg. Mater.-Engl. Tr. 1995. Vol. 31, P. 434-438.

- Composite materials on the base of polyfluorated co-polymers and detonation diamond. Voznyakovskij A.P., Dolmatov V.Yu., Levintova E.A., Gubarevich T.M. Doklady mezhdunarodnoj konferencii po kauchuku i rezine. Moskva, 27 September 1 October 1994., Vol. 2, P. 80-87 (in Russian). // Композиционные материалы на основе полифторированных сополимеров и технического алмазного углерода взрывного синтеза. Возняковский А.П., Долматов В.Ю., Левинтова Е.А., Губаревич Т.М. Доклады международной конференции по каучуку и резине. Москва, 27 сентября 1 октября 1994 г., Т. 2, С. 80-87.
- Friction properties of aluminum-based composites containing cluster diamond. Ouyang Q., Okada K. J. Vac. Sci. Technol. A. 1994. Vol. 12, No. 4, P. 2577-2580.
- 440 Mechanisms of orientation and graphitization of hard-carbon matrices in carbon/carbon composites. **Rellick G.S., Chang D.J., Zaldivar R.J.** *J. Mater. Res.* 1992. Vol. 7, No. 10, P. 2798-2809.
- 441 Nano-diamond enhanced silicon carbide matrix composites. Ownby P.D., Liu J. Ceram. Eng. Sci. Proc. 1991. Vol. 12, No. 7-8, P. 1345 -1355.

See also 263, 402, 403, 447, 475, 523, 604, 625, 631

# > 09.04. Antifriction coatings from nanodiamonds

- 442 Friction of smooth surfaces with ultrafine particles in the clearance. Chizhik S.A., Goldade A.V., Korotkevich S.V., Dubravin A.M. Wear. 2000. Vol. 238, No. 1,P. 25-33.
- 443 Nanodiamond films superior in durability to hard alloys. Andrianova T.N., Zakharov A.A., Letunovsky V.V., Demchenko A.N., Sergienko V.P., Gorshkov A.S., Goryacheva L.V. Zhurnal Prikladnoj Khimii. 2000. Vol. 73. No. 3. P. 365-368. (in Russian) // Покрытия из ультрадисперсного алмаза, повышающие износостойкость твердых сплавов. Андрианова Т.Н., Захаров А.А., Летуновский В.В., Демченко А.Н., Сергиенко В.П., Горшков А.С., Горячева Л.В. Журнал прикладной химии. 2000. Т. 73, № 3, С. 365-368.
- 444 Study on super-fine diamond cluster with application to ultra-precision surface generation. Eda H., Hamada H., Tomita Y., Yamamoto Y. J. Balkan Tribological Association. 1999. Vol. 5, No. 1-2, P. 94-104.
- 445 Tribological properties of nanocrystalline diamond films. Erdemir A., Fenske G.R., Krauss A.R., Gruen D.M., McCauley T., Csencsits R.T. Surf. Coat. Technol. 1999. Vol. 120-121, P. 565-572.

- 446 Formation of wear-resistant antifriction composite coating reinforced with ultradispersed diamonds. Antonyuk V.S. Superhard Materials. 1998. No. 4. P. 66-69. // Формирование износостойкого антифрикционного покрытия композитом, армированным ультрадисперсными алмазами. Антонюк В.С. Сверхтвердые материалы. 1998. № 4, С. 72-76.
- 447 Prospects for the development and application of bronze-based antifriction composite materials reinforced with shock-wave diamonds. Volkogon V.M. Superhard Materials. 1998. No. 4, P. 57-60. // Перспективы создания и применения антифрикционных композиционных материалов на основе бронз, армированных детонационными алмазами. Волкогон В.М. Сверхтвердые материалы. 1998. № 4, С. 62-67.
- 448 Ultradisperse diamonds in engineering industries: lubrication. **Komarov V.F.** // *Tehnika Mashinostroeniya.* 1998. No. 1, P. 124-125 (in Russian). // Ультрадисперсные алмазы в машиностроении. Смазка. **Комаров В.Ф.** *Техника машиностроения.* 1998. № 1, С. 124-125.

See also 258, 622, 630, 634

## > 09.05. Nanodiamonds for polishing

- 449 Ultradisperse diamonds in engineering industries: polishing. Komarov V.F. *Tehnika Mashinostroeniya*. 1997. No. 4, P. 106-107 (in Russian). // Ультрадисперсные алмазы в машиностроении. Полирование. Комаров В.Ф. *Техника машиностроения*. 1997. № 4, C. 106-107.
- Application of ultradisperse detonation diamond powder for polishing X-ray optical devices. Baraboshkin K.S., Volokhov A.I., Komarov V.F., Kostyukov S.I., Kruglyakov E.P., Petrov E.A., Fedorchenko M.F., Chalo N.I. Optich. Zhurnal. 1996. Vol. 63, No. 9, P. 58-60 (in Russian). // Применение ультрадисперсных алмазных порошков детонационной природы для полирования рентгенооптических элементов. Барабошкин К.С., Волохов А.И., Комаров В.Ф., Костюков С.И., Кругляков Э. П.,Петров Е.А., Федорченко М.Ф., Чхало Н.И. Оптический журнал. 1996. Т. 63, № 9, С. 58-60.
- 451 Ultradispersed diamond powders of detonation nature for polishing X-ray mirrors. Chkhalo N.I., Fedorchenko M.V., Kruglyakov E.P., Volokhov A.I., Baraboshkin K.S., Komarov V.F., Kostyukov S.I., Petrov E.A. Nucl. Instrum. Methods, A. 1995. Vol. 359, No. 1-2, P. 155-156.

See also 615, 616, 621, 629

### 09.06. Bioactivity of nanodiamond

- 452 Carbon nanocomposite materials as medicinal depot. Ostrovidova G.U., Makeev A.V., Biryukov A.V., Gordeev S.K. Mater. Sci. Eng. C. 2003. Vol. 23, No. 3, P. 377-381.
- 453 DNA-modified diamond surfaces. Knickerbocker T., Strother T., Schwartz M.P., Russell J.N., Butler J., Smith L.M., Hamers R.J. Langmuir. 2003. Vol. 19, No. 6, P. 1938-1942.
- Damaging effect of detonation diamonds on human white and red blood cells in vitro. Puzyr' A.P., Tarskikh S.V., Makarskaya G.V., Chiganova G.A., Larionova I.S., Detkov P.Ya., Bondar'V.S. Dokl. Akad. Nauk (Proceedings of the Russian Academy of Sciences). 2002. Vol. 385, No. 1-6, P. 201-204.
- 455 DNA-modified nanocrystalline diamond thin-films as stable, biologically active substrate. Yang W., Auciello O., Butler J.E., Cai W., Carlisle J.A., Gerbi J., Gruen D.M., Knickerbocker T., Lasseter T.L., Russell J.N., Smith L.M., Hamers R.J. Nature Materials. 2002. Vol. 1, No. 4, P. 253-257.
- 456 Nanostructures based on explosive synthesis particles and protein molecules. Puzyr' A.P., Purtov K.V., Bukayemsky A.A., Bondar' V.S. Proc. of 12<sup>th</sup> Intern. Symp. on Thin Films in Electronics, Kharkov, Ukraine, 2001. P. 320-325.
- 457 Supramolecular structure of nanodiamond particles and obelin built up on a two-dimensional plate. Purtov K.V., Bondar' V.S., Puzyr' A.P. Dokl. Akad. Nauk. 2001. Vol. 380, No. 3, P. 339-342 (in Russian).
- Application of nanodiamond particles for express extraction of recombinant apoobelin from Escherichia coli. **Bondar', V.S., Puzyr' A.P.** *Dokl. Akad. Nauk.* 2000. Vol. 373, No. 2, P. 251-253 (in Russian).
- 459 Detonation-synthesized nanodiamonds and the possibility to develop a new generation of medicines. Dolmatov V.Yu. Kostrova L.N. Superhard Materials. 2000. No. 3, P. 79-82. // Наноалмазы детонационного синтеза и возможность создания лекарственных нового поколения средств. Долматов В.Ю., Кострова Л.Н. Сверхтвердые материалы. 2000. № 3, C. 82-85.
- 460 Preparation of complexes nanodiamond-protein-δ-aluminum oxide. Puzyr A.P., Bondar V.S., Belobrov P.I., Bukaemskii A.A. Dokl. Akad. Nauk 2000. Vol. 373, P. 139-141 (in Russian).
- 461 Preparation of nanodiamond-protein--aluminum oxide complex. Puzyr A.P., Bondar V.S., Belobrov P.I., Bukaemskii A.A. Dokl. Akad. Nauk. 2000. Vol. 373. No. 3, P. 408-410 (in Russian).
- 462 Production of the nanodiamond-protein-8-aluminum oxide complex. Puzyr' A.P., Bondar' B.C., Belobrov P.I., BukaemskiiA.A. Dokl. Akad. Nauk. 2000. Т. 373, No. 3, P. 408-410 (in Russian). // Получение комплекса наноалмаз-белок-8-оксид алюминия Пузырь А.П., Бондарь В.С., Белобров П.И., Букаемский А.А. Докл. Акад. Наук. 2000. Т. 373. № 3, С. 408-410.

- 463 The use of nanodiamond particles for express removal of recombinational apoobeline from Escherichia coli. **Bondar' B.C., Puzyr' A.P.** Dokl. Akad. Nauk. 2000. Vol. 373, No. 2. P. 251-253 (in Russian). // Применение частиц наноалмаза для экспресс выделения рекомбинатного апообелина из Escherichia coli. **Бондарь В.С., Пузырь А.П.** Докл. Акад. Наук. 2000. Т. 373, № 2, С. 251-253.
- 464 Use of nanodiamond particles for rapid isolation of recombinant apoobelin from Escherichia coli. Bondar V.A., Puzyr A.P. Dokl. Akad. Nauk 2000. Vol. 373, P. 129-131 (in Russian).
- 465 Advanced composite materials. Gordeev S.K. Diamond Based Composite Materials and Related Materials. NATO ASI. Series 3. Kluwer Academic Pub.: 1996, Vol. 38, P. 1-11.
- 466 Surface-modified diamond nanoparticles as antigen delivery vehicles. Kossovsky N., Gelman A., Hnatyszyn H.J., Rajguru S., Garrell R.L., Torbati S., Feeney S.S., Chow G.-M. Bioconjugate Chem. 1995. Vol. 6, No. 5. P. 507-511.

See also 455

#### > 09.07. Nanodiamonds as adsorbents

Diamond - an adsorbent of a new type. Bogatyreva G.P., Marinich M.A., Gvyazdovskaya V.L. Diamond Relat. Mater. 2000. Vol. 9, P. 2002-2005.

See also 340, 354, 358, 371, 522

### > 09.08 Other applications

- 468 Electron emission from diamond nanoparticles on metal tips. Tyler T., Zhirnov V.V., Kvit A.V., Kang D., Hren J.J. Appl. Phys. Lett. 2003. Vol. 82, No. 17. P. 2904-2906.
- 469 A novel zirconocene/ultradispersed diamond black powder supported catalytic system for ethylene polymerization. Yuan Y.L., Wang L., Feng L.X. Europ. Polymer J. 2002. Vol. 38, No. 10, P. 2125-2128.
- 470 Catalysis on electrodes of promoted ultradispersed diamonds. Zhutaeva G.V., Marinich M.A., Bogatyreva G.P., Ishchenko E.V., Chernysheva I.S., Tarasevich M.P. Superhard Materials. 2002. No. 6. // Электрокатализ на электродах на основе промотированного ультрадисперсного алмаза. Жутаева Г.В., Маринич М.А., Богатырева Г.П., Ищенко Е.В., Чернышова И.С., Тарасевич М.Р. Сверхтвердые материалы. 2002. № 6, С. 55-59.

- 471 Onion-like carbon and diamond nanoparticles for optical limiting. Koudoumas E., Kokkinaki O., Konstantaki M., Couris S., Korovin S., Detkov P., Kuznetsov V., Pimenov S., Pustovoi V. Chem. Phys. Lett. 2002. Vol. 357, No. 5-6, P. 336-340.
- 472 Protective coatings from ultra fine diamond. Patrusheva T., Letunovsky V., Gorjacheva L., Gorschkov A., Sergienko V., Jakovleva E. Carbon. 2002. Vol. 40. P. 125-135.
- 473 Use of industrial diamonds in HPLC. Patel B.A., Rutt K.J., Padalko V.I., Mikhalovsky S.V. Superhard Materials. 2002. No. 6. // Использование промышленных алмазов в HPLC. Patel B.A., Rutt K.J., Padalko V.I., Mikhalovsky S.V. Сверхтвердые материалы. 2002. № 6, С. 51-54.
- 474 Diamond/sp2-bonded carbon structures: quantum well field electron emission? Karabutov A.V., Frolov V.D., Konov V.I. Diamond Relat. Mater. 2001. Vol. 10, P. 840-846.
- 475 Low-field electron emission of diamond/pyrocarbon composites. Karabutov V., Frolov V.D., Konov V.I., Ralchenko V.G., Gordeev S.K., Belobrov P.I. J. Vac. Sci. Technol. B. 2001. Vol. 19, No. 3, P. 965-970.
- 476 Nano-sized diamond obtained from explosive detonation and its application Chen Q., Yun S. Mater. Res. Bull. 2001. Vol. 35, No. 12, P. 1915-1919.
- 477 Low temperature growth of ultrananocrystalline diamond of glass substrates for field emission applications. Corrigan T.D., Krauss A.R., Gruen D.M., Auciello O., Chang R.P.H. Mat. Res. Soc. Symp. Proc. 2000. Vol. 593, P. 233-236.
- 478 Two- and three-dimensional ultrananocrystalline diamond (UNCD) structures for a high resolution diamond-based MEMs technology. Auciello O., Krauss A.R., Gruen D.M., Busmann H.G., Meyer E.M., Tucek J., Sumant A., Jayatissa A., Moldovan N., Mancini D.C., Gardos M.N. Mat. Res. Soc. Symp. Proc. 2000. Vol. 605, P. 73-78.
- Experience in and prospects for non-traditional use of explosion-synthesized ultradispersed diamonds. **Dolmatov V.Yu.** Superhard Materials. 1998. No. 4, P. 70-73. // Опыт и перспективы нетрадиционного использования ультрадисперсных алмазов взрывного синтеза. Долматов В.Ю. Сверхтвердые материалы. 1998. № 4, С. 77-81.
- 480 Ultradisperse diamonds in engineering industries. **Komarov V.F.** *Tehnika Mashinostroeniya*.1997. No. 3, P. 69-71 (in Russian). // Ультрадисперсные алмазы в машиностроении. **Комаров В.Ф.** *Техника машиностроения*. 1997. № 3, C. 69-71.
- 481 Diamond synthesis: The Russian connection. **DeVries R.C., Badzian A., Roy R.** *Mater. Res. Soc. Bull.* 1996. Vol. 21, No. 65-75, P. 70-71.

- 482 Ultradisperse diamond powders. Litvinov B.V., Filatov L.I., Detkov P.Ya., Samylov S.V., Averin A.N., Kramskoj Yu.I., Chukhaeva S.I. Nov. Prom. Tehnologii. 1994. No. 1, P. 30-32 (in Russian). // Порошки ультрадисперсных алмазов. Литвинов Б.В., Филатов Л.И., Детков П.Я., Самылов С.В., Аверин А.Н., Крамской Ю.И., Чухаева С.И. Нов. пром. технологии. 1994. № 1, С. 30-32.
- 483 Synthesis of diamond oxide systems from nanodiamonds. Gubarevich Т.М, Tysheckaya A.B. Zhurnal prikladnoj khimii. 1992. Vol. 65, No. 1. P. 34-37 (in Russian). // Синтез и исследование алмазоксидных систем на основе ультрадисперсных алмазов. Губаревич Т.М, Тышецкая А.Б. Журнал прикладной химии. 1992. Т. 65, № 1, С. 34-37.

See also 074, 135, 136, 140, 194, 234, 235, 237, 278, 343, 353

# 10. Nanographite, carbon onions and other nanodiamond-derived materials

See also 079

### > 10.01. Nanographite and low-dimensional carbon

- 484 Mesoscopic origami with graphite: scrolls, nanotubes, peapods. **Tomanek D.** *Physica B.* 2002. Vol. 323, No. 1-4, P. 86-89.
- 485 The temperature dependence of the electroresistivity and the negative magnetoresistance of carbon nanoparticles. Romanenko A.I., Anikeeva O.B., Okotrub A.V., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Dong C., Ni Y. Phys. Solid State. 2002. Vol. 44, No. 3, P. 487-489.
- 486 Effect of fluorination on nano-sized p-electron systems. Takai K., Sato H., Enoki T., Yoshida N., Okino F., Touhara H., Endo M. J. Phys. Soc. Jpn. 2001. Vol. 70, No. 1, P. 175-185.
- 487 Electronic transport properties of nanographite ribbon junctions. Wakabayashi K. Phys. Rev. B. 2001. Vol. 64, P. 125428.
- 488 Experimental evidence of a single nano-graphene. Affoune M., Prasad B.L.V., Sato H., Enoki T., Kaburagi Y., Hishiyama Y. Chem. Phys. Lett. 2001. Vol. 348, No. 1-2, P. 17-20.
- 489 Intercalated nanographite: Structure and electronic properties. Prasad L.V., Sato H., Enoki T., Hishiyama Y., Kaburagi Y., Rao A.M., Eklund P.C. Phys. Rev. B. 2001. Vol. 64, P. 235407.
- 490 Magnetism of nano-graphite and its assembly. Enoki T., Kawatsu N., Shibayama Y., Sato H., Kobori R., Maruyama S., Kaneko K. Polyhedrons. 2001. Vol. 20, No. 2, P. 1311-1315.
- 491 Mechanism of magnetism in stacked nanographite: theoretical study. Harigaya K., Kawatsu N., Enoki T. Nanonetwork Materials: Fullerenes, Nanotubes, and Related Systems, 2001. P. 529-532.
- 492 New type of antiferromagnetic state in stacked nanographite. **Harigaya K.** *Chemical Physics Letters*. 2001. Vol. 340, No. 1-2, P. 123-128.
- 493 Polygon building block route to sp(2)-carbon-based materials. Lee C.Y., Chiu H.T., Peng C.W., Yen M.Y., Chang Y.H., Liu C.S. Adv. Mater. 2001. Vol. 13, No. 14, P. 1105.
- 494 Structure and solid state properties of nano-graphite derived from nanodiamond. Enoki T., Prasad B.L.V. Tanso. 2001. Vol. 198, P. 139-146.
- 495 Carbon lines on SiC (001) surfaces. Catellani A., Galli G., Rigolli P. Phys. Rev. B. 2000. Vol. 62, No. 8, P. R4794-R4797.

- 496 Disordered magnetism at the metal-insulator threshold in nano-graphite-based carbon material. Shibayama Y., Sato H., Enoki T., Endo M. Phys. Rev. Lett. 2000. Vol. 84, No. 8, P.1744-1747.
- 497 Electronic transport through nanographite ribbon junctions. Wakabayashi K., Sigrist M. Physica B: Condensed Matter. 2000. Vol. 284, P. 1750-1751.
- 498 Energy of deformed and defective carbon clusters. Romanov E., Sheinerman A.G. Phys. Solid State. 2000. Vol. 42, No. 8, P. 1569-1574.
- 499 Nano-graphite and its intercalation compounds. Enoki T., Shibayama Y., Prasad B.L.V., Sato H. Mol. Cryst. Liquid Cryst. Sci. and Tech., Section C: Molecular Materials. 2000. Vol. 13, No. 1-4, P. 31-40.
- 500 Surface superstructure of carbon clusters deposited on graphite during recrystallization. An B., Fukuyama S., Yokogawa K., Yoshimura M. J. Vac. Sci. Technol. B. 2000. Vol. 18, No. 1, P. 98-102.
- 501 Edge-localized phonons in nanographite ribbons. Igami M., Fujita M., Mizuno S. Synthetic Metals. 1999. Vol. 103, No 1-3, P. 2576-2577.
- 502 Structural models of amorphous carbon surfaces. Haerle R., Galli G., Baldereschi A. Appl. Phys. Lett. 1999. Vol. 75, P. 1718-1720.
- A descriptive model linking possible formation mechanisms for graphite-encapsulated nanocrystals to processing parameters. Elliot B.R., Host J.J., Dravid V.P., Teng M.H., Hwang J.H. J. Mater. Res. 1997. Vol. 12, No. 12, P. 3328-3344.
- Structure and electronic properties of graphite nanoparticles. Andersson O.E., Prasad B.L.V., Sato H., Enoki T., Kaburagi H., Hishiyama Y., Yoshikawa M., Bandow S. Phys. Rev. B. 1998. Vol. 58, P. 16387-16395.
- Synthesis of carbyne from amorphous line-chain carbon and pyrographite. Guseva M.B., Babina V.M., Boustie M., Fortov V.E., Romain J.P., Zhuk A.Z., Babaev V.G., Khvostov V.V. P. 15-20 in book: Lasers in Synthesis, Characterization, and Processing of Diamond. Eds: Konov V.I., Ralchenko V.G., 256 pages (1998).
- Graphite encapsulated nanocrystals produced using a low carbon/metal ratio. Host J.J., Teng M.H., Elliott B.R., Hwang J.-H., Mason T.O., Johnson D.L., Dravid V.P. J. Mater. Res. 1997. Vol. 12, No. 5, P. 1268-1273.
- 507 Carbon nanostructures in silica aerogel composites. Song X.-Y., Cao W., Ayers M.R., Hunt A.J. J. Mater. Res. 1995. Vol. 10, No. 2, P. 251-254.
- 508 Microscopic structure of hydrogenated amorphous carbon. Iarlori S., Galli G., Martini O. Phys. Rev. B. 1994. Vol. 49, P. 7060-7063.
- 509 Topographical changes induced by high dose carbon-bombardment of graphite. Annis K., Pedraza D.F., Withrow S.P. J. Mater. Res. 1993. Vol. 8, No. 10, P. 2587-2589.

510 Reconstruction of diamond (111). Iarlori S., Galli G., Gygi F., Parrinello M., Tosatti E. Phys. Rev. Lett. 1992, Vol. 69, P. 2947-2950.

See also 134, 197, 201, 243, 244

#### > 10.02. Carbon onions

- 511 Continuum elastic model of fullerenes and the sphericity of the carbon onion shells. Ahmad S. J. Chem. Phys. 2002. Vol. 116, No. 8. P. 3396-3400.
- 512 Diamond nanoparticles to carbon onions transformation: X-ray diffraction studies. Tomita S., Burian A., Dore J.C., leBolloch D., Fujii M., Hayashi S. Carbon. 2002. Vol. 40, P. 1469-1474.
- 513 Electron microscopy study of carbon onions synthesized by ion implantation. Cabioc'h T., Thune E., Jaouen M., Banhart F. Philos. Mag. A. 2002. Vol. 82, No. 8, P. 1509-1520.
- 514 Formation of multishell fullerenes from vaporized carbons. Mordkovich V.Z., Shiratori Y., Hiraoka H., Takeuchi Y., Endo M. Mol. Cryst. Liq. Cryst. 2002. Vol. 386, P. 103-107.
- 515 In situ TEM observation of nucleation and growth of spherical graphitic clusters under ion implantation. Abe H., Yamamoto S., Miyashita A. J. Electron Microsc. 2002. Vol. 51, P. S183-S187.
- Mechanisms involved in the formation of onionlike carbon nanostructures synthesized by ion implantation at high temperature. Cabioc'h T., Thune E., Jaouen M. Phys. Rev. B. Vol. 65, No. 13, art. no.-132103.
- 517 Nucleation and growth of carbon onions synthesized by ion-implantation: a transmission electron microscopy study. Thune E., Cabioc'h T., Guerin P., Denanot M.F., Jaouen M. Mater. Lett. 2002. Vol. 54, No. 2-3. P. 222-228.
- 518 Optical extinction properties of carbon onions prepared from diamond nanoparticles. Tomita S., Fujii M., Hayashi S. Phys. Rev. B. 2002. Vol. 66, No. 24, P. 245424.
- Properties of carbon onions produced by an arc discharge in water. Sano N., Wang H., Alexandrou I., Chhowalla M., Teo K.B.K., Amaratunga G.A.J., Iimura K. J. Appl. Phys. 2002. Vol. 92, No. 5, P. 2783-2788.
- 520 Structural transformations in carbon nanoparticles induced by electron irradiation. **Banhart F.** *Phys. Solid State.* 2002. Vol. 44, No. 3, P. 399-404.
- 521 Structure and properties of carbon onion layers deposited onto various substrates. Cabioc'h T., Thune E., Riviere J.P., Camelio S., Girard J.C., Guerin P., Jaouen M., Henrard L., Lambin P. J. Appl. Phys. 2002. Vol. 91, No. 3, P. 1560-1567.

- 522 The catalytic use of onion-like carbon materials for styrene synthesis by oxidative dehydrogenation of ethylbenzene. Keller N., Maksimova N.I., Roddatis V.V., Schur M., Mestl G., Kuznetsov V.L., Butenko Y.V., Schlogl R. Angew. Chem. Int. 2002. Vol. 41, No. 11, P. 1885-1888.
- 523 Topology and electronic structure of onion-like carbon and graphite/diamond nanocomposites. Bulusheva L.G., Okotrub A.V., Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Heggie M.I. Mat. Res. Sym. Proc. 2002. Vol. 703. P. 381-386.
- 524 Atomic structure and stability of elliptical carbon onion. **Kitahara H., Oku T.,** Suganuma K. Eur. Phys. J. D. 2001. Vol. 16, No. 1-3, P. 361-363.
- 525 Electronic structure and optical properties of concentric-shell fullerenes from electron-energy-loss spectroscopy in transmission. Pichler T., Knupfer M., Golden M.S., Fink J., Cabioc'h T. Phys. Rev. B. 2001. Vol. 6315, No. 15, P. 5415, art. no. 155415.
- 526 Formation mechanisms for carbon onions and nanocapsules in C<sup>+</sup>-ion implanted copper. Abe H., Yamamoto S., Miyashita A., Sickafus K.E. J. Appl. Phys. 2001. Vol. 90, No. 7, P. 3353-3358.
- 527 Nanotechnology Synthesis of carbon 'onions' in water. Sano N., Wang H., Chhowalla M., Alexandrou I., Amaratunga G.A.J. Nature. 2001. Vol. 414, No. 6863, P. 506-507.
- 528 Nucleation of carbon onions and nanocapsules under ion implantation at high temperature. Abe H. Diamond Relat. Mater. 2001. Vol. 10, No. 3-7, P. 1201-1204.
- 529 Structure and electronic properties of carbon onions. Tomita S., Sakurai T., Ohta H., Fujii M., Hayashi S. J. Chem. Phys. 2001. Vol. 114, No. 17, P. 7477-7482.
- 530 Ultraviolet-visible absorption spectroscopy of carbon onions. Tomita S., Hayashi S., Tsukuda Y., Fujii M. Physics of Solid State. 2002. Vol. 44, P. 450-453.
- 531 Probing the electronic state of onion-like carbon. Okotrub A.V., Bulusheva L.G., Romanenko A.I., Kuznetsov V.L., Butenko Yu.V., Dong C., Ni Y., Heggie M.I. AIP Conference Proceedings. 2001. Vol. 591, No. 1, 349-352.
- 532 A new and simple method for thin graphitic coating of magnetic-metal nanoparticles. Tomita S., Hikita M., Fujii M., Hayashi S., Yamamoto K. Chem. Phys. Lett. 2000. Vol. 316, P. 361-364.
- Formation of Co filled carbon nanocapsules by metal-template graphitization of diamond nanoparticles. Tomita S., Hikita M., Fujii M., Hayashi S., Akamatsu K., Deki S., Yasuda H. J. Appl. Phys. 2000. Vol. 88, P. 5452-5456.

- Fullerenic carbon in combustion-generated soot. Grieco W.J., Howard J.B., Rainey L.C., Vander Sande J.B. Carbon. 2000. Vol. 38, P. 597-614.
- 535 Irradiation-induced transformation of graphite to diamond: A quantitative study.
  Zaiser M., Lyutovich Y., Banhart F. Phys. Rev. B. 2000. Vol. 62,
  No. 5, P. 3058-3064.
- 536 Spherical nanometer-sized diamond obtained from detonation. Chen P.W., Ding Y.S., Chen Q., Huang F.L., Yun S.R. Diamond Relat. Mater. 2000. Vol. 9, No. 9-10, P. 1722-1725.
- 537 Thin films of carbon nanocapsules and onion-like graphitic particles prepared by the cosputtering method. Mamezaki O., Adachi H., Tomita S., Fujii M., Hayashi S. Jap. J. Appl. Phys. 2000. Vol. 39, Part 1, No. 12A, P. 6680-6683.
- 538 Transformation of carbon onions to diamond by low-temperature heat treatment in air. Tomita S., Fujii M., Hayashi S., Yamamoto K. Diamond Relat. Mater. 2000. Vol. 9, No. 3-6, P. 856-860.
- 539 Concentric-shell fullerenes and diamond particles: A molecular-dynamics study.
  Fugaciu F., Hermann H., Seifert G. Phys. Rev. B. 1999. Vol. 60,
  No. 15, P. 10711-10714.
- 540 Electron energy-loss spectroscopy of carbon onions. Fujii M., Yamamoto K., Hayashi S., Tomita S. Chem. Phys. Lett. 1999. Vol. 305, No. 3-4, P. 225-229.
- 541 Investigation of carbon aggregates (onions) formed on copper under the conditions of diamond chemical vapour deposition. Lenormand F., Constant L., Ehret G., Romeo M., Charai A., Saikaly W., Speisser C. Phil. Mag. A. 1999. Vol. 79, No. 7, P. 1739-1756.
- 542 Irradiation effects in carbon nanostructures **Banhart F.** Rep. Prog. Phys. 1999. Vol. 62, P. 1181-1221.
- 543 Theoretical study of the formation of closed curved graphite-like structures during annealing of diamond surface. Kuznetsov V.L., Zilberberg I.L., Butenko Yu.V., Chuvilin A.L., Segall B. J. Appl. Phys. 1999. Vol. 86, No. 2, P. 863-870.
- 544 Closed curved graphite-like structures formation on micron-size diamond. Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Gutakovskii A.K., Stankus S.V., Khairulin R.A. Chem. Phys. Lett. 1998. Vol. 289, P. 353-360.
- EELS study of the irradiation-induced compression of carbon onions and their transformation to diamond. Banhart F., Ajayan P.M., Lyutovich Y., Redlich P. Carbon. 1998. Vol. 36, No. 5-6, P. 561-563.
- Onion-like and equilibrium structure of carbon. Donnet J.-B., LeMoigne C., Wang T.K., Samirant M., Eckhardt A. Comptes Rendus de l'Académie des Sciences - Series IIC - Chemistry. 1998. Vol. 1, No. 7, P. 431-434.

- 547 Raman identification of onion-like carbon. Obraztsova E.D., Fujii M., Hayashi S., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L. Carbon. 1998. Vol. 36, No. 5-6, P. 821-826.
- Saman investigation of onion-like carbon. Obraztsova E.D., Pimenov S.M., Konov V.I., Fujii M., Hayashi S., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Loubnin E.N. Molecular Materials. 1998. Vol. 10, No. 1-4, P. 249-255.
- 549 The migration of metal atoms through carbon onions. Banhart F., Redlich P., Ajayan P.M. Chem. Phys. Lett. 1998. Vol. 292, P. 554-560.
- Carbon onions as possible carriers of the 2175 A interstellar absorption bump. Henrard L., Lambin Ph., Lucas A.A. Astrophys. J. Pt. 1. 1997. Vol. 487, No. 2. P. 719-724.
- 551 Formation of diamond in carbon onions under MeV ion irradiation. Wesolowski P., Lyutovich Y., Banhart F., Carstanjen H.D., Kronmuller H. Appl. Phys. Lett. 1997. Vol. 71, No. 14, P. 1948-1950.
- 552 Radiation-induced transformation of graphite to diamond. Zaiser M., Banhart F. Phys. Rev. Lett. 1997, Vol. 79, P. 3680-3683.
- 553 Self-compression and diamond formation in carbon onions. Banhart F. Ajayan P.M. Adv. Mater. 1997. Vol. 9, No. 3, P. 261-263.
- 554 The transformation of graphitic onions to diamond under electron irradiation. Banhart F. J. Appl. Phys. 1997. Vol. 81, P. 3440-3445.
- Carbon onion as nanoscopic pressure cell for diamond formation. Banhart F., Ajayan P.M. Nature. 1996. Vol. 382, P. 433-435.
- 556 Onion-like graphitic particles. Ugarte D. Carbon. 1995. Vol. 33, No. 7, P. 989-993.
- 557 High-temperature behaviour of "Fullerene-black". Ugarte D. Carbon. 1994. Vol. 32, No. 7, P. 1245-1248.
- 558 Onion-like carbon from ultra-disperse diamond. Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Malkov I.Yu., Titov V.M. Chem. Phys. Lett. 1994. Vol. 222, P. 343-348.
- 559 Formation mechanism of quasi-spherical carbon particles induced by electron bombardment. Ugarte D. Chem. Phys. Lett. 1993. Vol. 207, No. 4-6, P. 473-479.
- 560 Raman spectroscopy of closed-shell carbon particles. Bacsa W.S., DeHeer W.A., Ugarte D. Chem. Phys. Lett. 1993. Vol. 211, No. 4-5, P. 346-352.
- 561 Curling and closure of graphitic networks under electron-beam irradiation. Ugarte D. Nature. 1992. Vol. 359, P. 707-709.

### 11. Diamond Nanorods

- 562 Ab initio modelling of diamond nanowire structures. Barnard A.S., Russo S.P., Snook I.K. Nano Letters. 2003, in press.
- 563 Ab initio modelling of B and N in diamond nanowires. Barnard A.S., Russo S.P., Snook I.K. Phil. Mag. 2003, accepted.
- Ab initio modelling of dopants in diamond nanowires: Part II. Barnard A.S., Russo S.P., Snook I.K. Phil. Mag. 2003, accepted.
- 565 Would diamond nanorods be stronger than fullerene nanotubes? Shenderova O., Brenner D., Ruoff R.S. Nano Letters. 2003, in press.
- Surface structure of cubic diamond nanowires. Barnard A.S., Russo S.P., Snook I.K., submitted for publication to Surf. Sci. 2002, in press.
- 567 Synthesis of well aligned diamond nanocylinders. Masuda H., Yanagishita T., Yasui K., Nishio K., Yagi I., Rao T.N., Fijishima A. Adv. Mat. 2001. Vol. 13, P. 247.
- 568 Aligned diamond nanowhiskers. **Baik E.-S., Baik Y.-J., Jeon D.** *J. Mater. Res.* 2000. Vol. 15, No. 4, P. 923-926.
- 569 Direct conversion to diamond and BN nanotube growth in nitrogen fluid: nanoscopic observation of laser-heated samples in diamond anvil cell. Yusa H. New Diamond Front. Carbon Technol. 2000. Vol. 10, No. 5, P. 301-312.
- 570 Fabrication of diamond nano-whiskers. Baik E.-S., Baik Y.-J., Lee S.W., Jeon D. Thin Solid Films. 2000. Vol. 377-378, P. 295-298.
- 571 Conversion of nickel coated carbon nanotubes to diamond under high pressure and high temperature. Han W., Fan S., Li Q., Zhang C.L. J. Appl. Phys. Lett. 1998. Vol. 37, No. 9A/B, P. L1085-L1086.
- 572 Diamond needles and tips as engineered growth shapes. Cherian K.A., Litster J., Rudolph V., White E.T. Mater. Res. Soc. Symp. Proc. 1996. Vol. 416, P. 241-247.

#### 12. Nanodiamonds in Nature

- 573 Alteration of interstellar organic materials in meteorites' parent bodies: a novel route for diamond formation. Nakano H., Kouchi A., Arakawa M., Kimura Y., Kaito C., Ohno H., Hondoh T. Proceedings of the Japan Academy Ser. B Physical and Biological Sciences. 2002. Vol. 78, No. 9, P. 277-281.
- 574 Laboratory investigation of hydrogenated diamond surfaces: Implications for the formation and size of interstellar nanodiamonds. Sheu S.Y., Lee I.P., Lee Y.T., Chang H.C. Astrophys. J. Part 2. 2002. Vol. 581, No. 1, P. L55-L58.
- 575 Nanodiamonds around HD 97048 and Elias 1. Van Kerckhoven C., Tielens A.G.G.M., Waelkens C. Astron. Astrophys. 2002. Vol. 384, No. 2, P. 568-584.
- 576 Possible in situ formation of meteoritic nanodiamonds in the early solar system.
  Dai Z.R., Bradley J.P., Joswiak D.J., Brownlee. D.E., Hill H.G.M.,
  Genge M.J. Nature. 2002. Vol. 418, No. 6894, P. 157-159.
- 577 Some features of nitrogen release from presolar diamond fractions of the Efremovka meteorite. Fisenko A.V., Verchovsky A.B., Semenova L.F., Pillinger C.T. Geochemistry International. 2002. Vol. 40, No. 9, P. 914-918.
- 578 The size of interstellar nanodiamonds revealed by infrared spectra of CH on synthetic diamond nanocrystal surfaces. Chen C.-F., Wu C.-C., Cheng C.-L., Sheu S.-Y., Chang H.-C. J. Chem. Phys. 2002. Vol. 116, No. 4, P. 1211-1214.
- 579 Aromatic hydrocarbons, diamonds, and fullerenes in interstellar space: puzzles to be solved by laboratory and theoretical astrochemistry. Sellgren K. Spectrochim. Acta. A. 2001. Vol. 57, No. 4, P. 627-642.
- 580 Isotope anomalies in tellurium and palladium from allende nanodiamonds. Maas R., Loss R.D., Rosman K.J.R., De Laeter J.R., Lewis R.S., Huss G.R., Lugmair G.W. Meteoritics & Planetary Science. 2001. Vol. 36, No. 6, P. 849-858.
- 'Isotopically strange xenon' in meteoritic nanodiamonds: Implantation by stellar winds? Heymann D. Astrophys. Space Sci. 2001. Vol. 275, No. 4, P. 415-423.
- History of trace gases in presolar diamonds inferred from ion-implantation experiments. Koscheev A.P., Gromov M.D., Mohapatra R.K., Ott U. Nature. 2001. Vol. 412. No. 6847, P. 615-617.
- 583 Infrared, ultraviolet, and electron paramagnetic resonance measurements on presolar diamonds: Implications for optical features and origin. Braatz A., Ott U., Henning T., Jager C., Jeschke G. Meteoritics & Planetary Science. 2000. Vol. 35, No. 1, P. 75-84.
- Interstellar diamond: The analysis results for carbon, nitrogen, and noble gases in different grain-size fractions. **Fisenko A.V., Verhovsky A.B., Semjonova L.F., Pillinger C.T.** *Solar System Research.* 2000. Vol. 34, No. 1, P. 20-36.

- 585 Interstellar nanodiamonds: the carriers of mid-infared emission bands?

  Jones A.P., d'Hendecourt L. Astron. Astrophys. 2000. Vol. 355, No. 3,
  P. 1191-1194.
- Earth and planetary sciences: a diamond trylogy: superplumes, supercontinents and supernovae. **Haggerty S.E.** *Science*. 1999. Vol. 285, No. 5429, P. 851-854.
- Neutrino fluence after r-process freezeout and abundances of Te isotopes in presolar diamonds. Qian Y.-Z., Vogel P., Wasserburg G.J. Astrophys. J. 1999. Vol. 513, P. 956-960.
- 588 Carbon carbon in the universe. Henning T., Salama F. Science. 1998. Vol. 282, No. 5397, P. 2204-2210.
- 589 Carbon From space to laboratory. Henning T., Schnaiter M. Earth Moon and Planets. 1998. Vol. 80, N. 1-3, P. 179-207.
- High enrichment of carbon and volatile elements in the surface layers of Luna 16 soil sample 1635: Result of comet or meteorite impact? Dikov Yu.P.,
   Ivanov A.V., Wlotzka F., Galimov E.M., Wanke H. Earth and Planetary Science Letters. 1998. Vol. 155, No. 3-4, P. 197-204.
- 591 C, N, and Noble Gas Isotopes in Grain Size Separates of Presolar Diamonds from Efremovka. Verchovsky A.B., Fisenko A.V., Semjonova L.F., Wright I.P., Lee M.R., Pillinger C.T. Science. 1998. Vol. 281, P. 1165-1168.
- 592 Infrared spectroscopy of interstellar nanodiamonds from the Orgueil meteorite. Hill H.G.M., d'Hendecourt L.B., Perron C., Jones A.P. Meteorit. Planet. Sci. 1997. Vol. 32, P. 713-718.
- 593 Interstellar diamond in Allende SUZ: a comparative analysis from the oxidation kinetics data. Fisenko A.V., Tatsij V.F., Semjonova L.F., Kashkarov L.L. Astronom. vestnik. 1997. Vol. 31, No. 1, P. 82-90.// Межзвездный алмаз в Allende СУЗ: Сравнительный анализ по кинетике окисления. Фисенко А.В., Таций В.Ф., Семёнова Л.Ф., Кашкаров Л.Л. Астроном. вестник. 1997. Т. 31, № 1, С. 82-90.
- Genesis of presolar diamonds: Comparative high-resolution transmission electron microscopy study of meteoritic and terrestrial nano-diamonds.
   Daulton T.L., Eisenhour D.D., Bernatowicz T.J., Lewis R.S., Buseck P.R. Geochim. Cosmochim. Acta. 1996. Vol. 60, No. 23, P. 4853-4872.
- Facts and artifacts in interstellar diamond spectra. Mutschke H., Dorschner J., Henning Th., Jaeger C., Ott U. Astrophys J. 1995. Vol. 454, P. L157 L160.
- Multiple diamond components in Acfer 182. Grady M.M., Lee M.R., Arden J.W., Pillinger C.T. Earth and Planetary Science Letters. 1995. Vol. 136, No. 3-4, P. 677-692.
- 597 Noble gases in presolar diamonds I: three distinct components and their implications for diamond origins. Huss G.R., Lewis R.S. Meteorites. 1994. Vol. 29, P. 791-810.

- 598 "Diamonds" in the dense molecular clouds: a challenge to the standard interstellar paradigm. Allamandola L.J., Sandford S.A., Tielens A.G.G.M., Herbst T.M. Science. 1993. Vol. 260, P. 64-60.
- 599 Intersteller grains in meteorites. Ott U. Nature. 1993. Vol. 364, P. 25-33.
- 600 Intersteller grains in primitive meteorites: diamond, silicon carbide, and graphite. Anders E.B., Zinner E. Meteorites. 1993. Vol. 28, P. 490-514.
- 601 Origin of nanodiamonds in primitive chondrites (1) Theory. Ozima M, Mochizuki K. Meteorites. 1993. Vol. 28, P. 416-417.
- 602 Supernovae as sources of interstellar diamonds. Nuth J.A.III, Allen J.E. J. Astrophys. Space. Sci. 1992. Vol. 196, P. 117-123.

See also 001, 003, 005, 006, 352, 550

# 13. Inventions and Patents

- 603 Diamond/carbon nanotube structures for efficient electron field emission. Dimitrijevic S., Withers J., Loutfy R. US Patent Application 20010024078 from 09.27.2001
- Method of producing a composite more precisely a nanoporous body and a nanoporous body produced thereby. Gordeev S., Zhukov S., Belobrov P., Smolianinov A., Dikov I. US Patent N6083614 from 04.07.2000.
- A way of separating nanodiamond from non-diamond carbon. Kovrigin S.A., Migin A.N., Uvarov S.V. Russian Patent N2132816 from 10.07.99. // Способ очистки ультрадисперсного алмаза от неалмазного углерода. Ковригин С.А., Мигин А.Н., Уваров С.В. Патент Российской Федерации N2132816 от 10.07.99.
- 606 Technique for the fabrication of bulk porous diamond. Bates S., US Patent N5885541, Apr. 23, 1999.
- 607 Field emission devices employing diamond particle emitters. Jin S., Kochanski G.P., Zhu W. US Patent N5977697, Nov. 2, 1999.
- 608 Synthetic diamond-containing material and method of obtaining it from Vereschagin A.L., Petrov E.A., Sakovich G.V., Komarov V.F., Klimov A.V., Kozyrev N.V. US Patent N5861349, Jan. 19, 1999.
- 609 Method of making field emission devices employing ultra-fine diamond particle emitters. Jin S., Kochanski G.P., Zhu W. US Patent 5709577, Jan. 20 (1998).
- 610 Method for the preparation of nanocrystalline diamond thin films. **Gruen D**. US Patent N5772760, Jun. 30 (1998).
- 611 A modified nanodiamond suspension. Zalyaliev M.M., Nadeeva F.I., Xabibullin I.G. Russian Patent N 2094371 prioriget from 20.12.91 Billyuten' Izobretenij. 1997. No. 30. P. 241. // Суспензия ультрадисперсного модифицированного алмаза. Залялиев М.М., Надеева Ф.И., Хабибуллин И.Г. Патент Российской Федерации N 2094371 приоригет от 20.12.91 Биллютень изобретений. 1997. № 30. C. 241.
- 612 A technology for nanodiamond purification. Filatov L.I., Chukhaeva S.I., Detkov P.Ya. Russian Patent N2077476 from 20.04.97. // Способ очистки ультрадисперсных алмазов. Филатов Л.И., Чухаева С.И., Детков П.Я. Патент Российской Федерации N2077476 от 20.04.97.
- A technology for nanodiamond separation. Eryomenko N.K., Obraztsova I.I., Efimov O.A., Korobov Yu.A., Safonov Yu.N., Sidorin Yu.Yu. Russian Patent N2081821 from 20.06.97. // Способ отделения ультрадисперсного алмаза. Ерёменко Н.К., Образцова И.И., Ефимов О.А., Коробов Ю.А., Сафонов Ю.Н., Сидорин Ю.Ю. Патент Российской Федерации N2081821 от 20.06.97.

- 614 A way of nanodiamond removal from an aqueous suspension. Vasilishin M.S., Bratilov B.I., Petrov E.A., Svetlov S.A. Russian Patent N2083490 from 10.07.97. // Способ выделения ультрадисперсных алмазов из водной суспензии. Василишин М.С., Братилов Б.И., Петров Е.А., Светлов С.А. Патент Российской Федерации N2083490 от 10.07.97.
- An antifriction additive. Nikitin E.V., Slyusarev S.Ya., Filippova E.V., Danilov A.I., Skryabin Yu.A. Russian Patent N2054456 from 20.02.1996. // Антифрикционная присадка. Никитин Е.В., Слюсарев С.Я., Филиппова Е.В., Данилов А.И., Скрябин Ю.А. Патент Российской Федерации N 2054456 от 20.02.1996.
- A polishing paste. Martonik M.V., Red'kin V.E., Staver A.M. Russian Patent N2058359 from 20.04.96. // Полировальная паста. Мартоник М.В., Редькин В.Е., Ставер А.М. Патент Российской Федерации N2058359 от 20.04.96.
- A technology for removal of nanodiamonds from stable aqueous suspensions. Ovcharenko A.G., Gubarevich T.M., Sataev P.P., Brylyakov P.M. Russian Patent N1614354 from 10.01.96. // Способ выделения ультрадисперсных алмазов из устойчивых водных суспензий. Овчаренко А.Г., Губаревич ТМ, Сатаев Р.Р., Брыляков П.М. Патент Российской Федерации N1614354 от 10.01.96.
- 618 A way of producing onion carbon. Titov V.M., Mal'kov I.Yu., Kuznetsov V.L., Chuvilin A.L. Patent Application in Russia N 93048251 from 20.06.1996. // Способ получения частиц углерода луковичной структуры. Титов В.М., Мальков И.Ю., Кузнецов В.Л., Чувилин А.Л. Заявка РФ N93048251 от 20 06 1996
- 619 Carbon composition production process. Guschin V.A., Zakharov A.A., Lyamkin A.I., Staver A.M. US Patent N5482695, Jan. 9 (1996).
- 620 Diamond-containing material and its production technology. Vereschagin A.L., Petrov E.A., Sakovich G.V., Komarov V.F., Klimov A.V., Kozyrev N.V. Russian Patent N2051092 from 27.12.95. // Алмазосодержащее вещество и способ его получения. Верещагин А.Л., Петров Е.А, Сакович Г.В., Комаров В.Ф., Климов А.В., Козырев Н.В. Патент Российской Федерации N2051092 от 27.12.95.
- 621 A grinding and polishing composition. Martonik M.V., Primacheva L.G., Red'kin V.E., Staver A.M. Russian Patent N2005758 from 15.01.94. // Шлифовально-полировальный состав. Мартоник М.В., Примачева Л.Г., Редькин В.Е., Ставер А.М. Патент Российской Федерации N2005758 от 15.01.94.
- A liquid cooling lubricant for mechanical treatment of metals. Red'kin V.E., Staver A.M., Shangin A.P. Russian Patent N2009186 from 15.03.94. // Смазочно-охлаждающая жидкость для механической обработки металлов. Редькин В.Е., Ставер А.М., Шангин А.П. Патент Российской Федерации N2009186 от 15.03.94.

- A nanodiamond separation technology. Ovcharenko A.G., Gubarevich T.M., Sataev P.P., Brylyakov P.M., Solohina A.B., Ignatchenko A.V. Russian Patent N2019500 from 15.09.94. // Способ выделения ультрадисперсных алмазов. Овчаренко А.Г., Губаревич Т.М., Сатаев Р.Р., Брыляков П.М., Солохина А.Б., Игнатченко А.В. Патент Российской Федерации N2019500 от 15.09.94.
- 624 A technology for removal of nanodiamonds from stable aqueous suspensions. Ovcharenko A.G., Brylyakov P.M., Sataev P.P., Gubarevich T.M. Russian Patent N1792915 from 7.02.93. // Способ выделения ультрадисперсных алмазов из устойчивых водных суспензий. Овчаренко А.Г., Брыляков П.М., Сатаев Р.Р., Губаревич Т.М. Патент Российской Федерации N1792915 от 7.02.93.
- 625 A way of producing a nanodiamond-strenthened material. Kozharskij S.P., Komarov V.F., Potapov M.G., Petrov E.A., Sakovich G.V., Shalyuta V.N. Russian Patent N2001718 from 30.10.1993. // Способ получения дисперсноупрочненного материала. Кожарский С.П., Комаров В.Ф., Потапов М.Г., Петров Е.А., Сакович Г.В., Шалюта В.Н. Патент Российской Федерации N2001718 от 30.10.1993.
- Purification of detonation diamond. Chiganov A.S., Chiganova G.A., Tushko Yu.M., Staver A.M. Russian Patent N2004491 from 15.12.93. // Способ очистки детонационного алмаза. Чиганов А.С., Чиганова Г.А., Тушко Ю.М., Ставер А.М. Патент Российской Федерации N2004491 от 15.12.93.
- 627 Synthesis of diamond powders in the gas phase. Frenklach M.Y., Spear K.E., Koba R.J. U.S. Patent N5087434, Feb. 11, 1992.
- 628 A diamond purification technology. Gubarevich T.M., Larionova I.S., Kostyukova N.M., Ryzhko G.A., Turitsyna O.F., Pleskach L.I., Sataev P.P. Avt. Svid. USSR N1770272 from 22.06.92. // Способ очистки алмаза. Губаревич Т.М., Ларионова И. С., Костюкова Н.М., Рыжко Г.А., Турицына О.Ф., Плескач Л.И., Сатаев Р.Р. Авт. свид. СССР N1770272 от 22.06.92.
- 629 An abbrasive diamond suspension. Zakharov A.A., Red'kin V.E., Staver A.M. Russian Patent N1781271 from 15.12.92. // Алмазная абразивная суспензия. Захаров А.А., Редькин В.Е., Ставер А.М. Патент Российской Федерации N1781271 от 15.12.92.
- A lubricating composition. Prihod'ko E.E., Stepanova N.V., Brylyakov P.M. Russian Patent № 2028370 from 18.02.92. // Смазочный состав. Приходько Е.Е., Степанова Н.В., Брыляков П.М. Патент Российской Федерации N2028370 от 18.02.92.

- 631 A nanodiamond-containing composition and its production. **Korobov D.Yu., Korobov Yu.A.** Russian Patent N2049723 prioritet from 19.05.92. *Billyuten' izobretenij.* 1995. No. 3, P. 144. // Дисперсная алмазосодержащая композиция и способ её получения. **Коробов Д.Ю., Коробов Ю.А.** Патент Российской Федерации N2049723 приоритет от 19.05.92. *Биллютень изобретений.* 1995. № 3, C. 144.
- 632 A technology for purification of nanodiamonds from non-diamond carbon. Gubarevich T.M., Larionova I.S., Sataev P.P., Dolmatov V.Yu., Pyaterikov V.F. Avt. Svid. USSR N1819851 from 12.10.92. // Способ очистки ультрадисперсных алмазов от неалмазного углерода. Губаревич Т.М., Ларионова И.С., Сатаев Р.Р., Долматов В.Ю., Пятериков В.Ф. Авт. свил. СССР N1819851 от 12.10.92.
- A way of separating synthetic nanodiamonds. Dolmatov V.Yu., Suschev V.G., Aleksandrov M.M., Sakovich G.V., Vishnevskij E.N., Pyaterikov V.F., Sataev P.P., Komarov V.F., Brylyakov P.M., Shitenkov N.V. Avt. Svid. USSR N1828067 from 13.10.92. // Способ выделения синтетических ультрадисперсных алмазов. Долматов В.Ю., Сущев В.Г., Александров М.М., Сакович Г.В., Вишневский Е.Н., Пятериков В.Ф., Сатаев Р.Р., Комаров В.Ф., Брыляков П.М., Шитенков Н.В. Авт. свид. СССР N1828067 от 13.10.92.
- 634 Diamond-based antifriction material. Yashchenko N.K., Ogorodnik V.V. US Patent N5158695, Oct. 27, 1992.
- 635 Purification of diamond-containing mixtures. Gubarevich T.M., Larionova I.S., Ryzhko G.A., Kostyukova N.M., Sataev P.P. Avt. Svid. USSR N1830883 from 13.10.92. // Способ очистки алмазсодержащей шихты Губаревич Т.М., Ларионова И.С, Рыжко Г.А., Костюкова Н.М., Сатаев Р.Р. Авт. свид. СССР N1830883 от 13.10.92.
- Purification of nanodiamonds from non-diamond carbon. Gubarevich T.M., Larionova I.S., Sataev P.P., Dolmatov V.Yu., Pyaterikov V.F. Avt. Svid. USSR N1819851 from 12.10.92. // Способ очистки ультрадисперсных алмазов от неалмазного углерода. Губаревич Т.М., Ларионова И.С., Сатаев Р.Р., Долматов В.Ю.,Пятериков В.Ф. Авт. свид. СССР N1819851 от 12.10.92.
- A technology for purification of diamond powder from surface impurities. Gubarevich T.M. Larionova I.S., Kostyukova N.M., Sataev P.P., Brylyakov P.M., Dolmatov V.Yu., Suwev V.T., Aleksandrov M.M. Avt. Svid. USSR N1658558 from 22.02.91. // Способ очистки порошка алмаза от поверхностных примесей. Губаревич Т.М., Ларионова И.С., Костюкова Н.М., Сатаев Р.Р., Брыляков П.М., Долматов В.Ю., Сущев В.Т., Александров М.М. Авт. свид. СССР N1658558 от 22.02.91.

- 638 A way of purifying nanodiamonds. Gubarevich T.M., Kostyukova N.M., Sataev P.P., Larionova I.S., Brylyakov P.M. Avt. Svid. USSR N1538430 from 15.09.89. // Способ очистки ультрадиспереных алмазов. Губаревич Т.М., Костюкова Н.М., Сатаев Р.Р., Ларионова И.С., Брыляков П.М. Авт. свид. СССР N1538430 от 15.09.89.
- 639 Method for forming diamonds from carbonaceous material. Daulton T.; Lewis R., Rehn L., Kirk M. US Patent N6,315,871, Nov. 13, 2001.
- 640 Method of dehalogenation using diamonds. Farcasiu M., Kaufman P., Ladner E. US Patent N6,143,939, Nov. 7, 2000.
- 641 Photochemically modified diamond surfaces, and method of making the same.

  Miller J. US Patent N5,593,783, Jan. 14, 1997.
- 642 Method for production of ultradispersed diamond. Stavrev S., Lazarov S., Stoev K., Markov L., Ivanov V. US Patent N4. 5,353,708, Oct. 11, 1994.

# 14. Companies and Centres are presently working in the field of detonation nanodiamonds (e-mail addresses and/or websites)

 "Alit" Ltd, Kiev, Ukraine E-mail: vp@alit.kiev.ua http://www.alit.kiev.ua

2. "Alitex Ltd", Prague, Czech Republic

E-mail: alitex@volny.cz

3. Bakul Institute for Superhard Materials, Kiev, Ukraine

E-mail: shtm@ism.kiev.ua http://www.ism.kiev.ua

4. Carbo Get GmbsH, Baesweiler, Germany

E-mail: info@carbo-tec.de

5. Diamond Centre, St. Petersburg, Russia

E-mail: alcen@comset.net http://www.nanodiamond.spb.ru

6. Federal State Unitary Enterprise "Special Design and Technological Office "Technolog", St. Petersburg, Russia

E-mail: alcen@comset.net

7. Federal Research and Production Centre "Altay", Biysk, Russia

E-mail: post@frpc.secna.ru

8. **JSC "DISARM"**, St. Petersburg, Russia

E-mail: disarm@vilan.spb.ru

9. Institute of Machine Reliability, Minsk, Republic Belarus

E-mail: nanotech@inmash.bas-net.by diamond@inmash.bas-net.by

10. Mineralien-Werke Kuppenheim GmbH, Kuppenheim, Germany

E-mail: verkauf-mwk@mineralien-werke.de

http://www.mineralien-werke.de

# 11. Nanodiamond.com, Massagno, Switzerland

E-mail: contact@nanodiamond.com http://www.nanodiamond.com

# 12. **PlasmaChem GmbH**, Mainz, Germany http://www.plasmachem.de

# 13. Shenzhen JINGANGYUAN New Material Co., Ltd., Japan

E-mail: root@newnanomaterial.com http://www.newnanomaterial.com

# 14. Ultradiamond Technologies Inc, Somerville, MA, USA

E-mail: info@ultradiamondtech.com http://www.ultradiamondtech.com

# 15. Vision Development Co., Ltd, Tokyo, Japan

E-mail: k-vision@rapid.ocn.ne.jp http://www7.ocn.ne.jp/~k-vision/

# 16. Vollstaedt Diamant GmbH, Seddin, Germany

E-mail: http://www.vollstaedt-diamant.de/

# 17. "WOOIN NANOTECH, Co.Ltd", Seoul, Korea

E-mail: godmik@hotmail.com

# 15. Scientific groups are presently working in the field of detonation nanodiamond (websites or/and e-mail addresses)

#### Australia

1. Royal Melbourne Institute of Technology, Melbourne

(Barnard A.S., Russo S.P, Snook I.K.)
E-mail: amanda.barnard@rmit.edu.au

http://www.rmit.edu.au

2. University of Melbourne, Parkville

(Prawer S., Nugent K.W., Jamieson D.N., Orwa J.O., Bursill L.A., Peng J.L.)

E-mail: s.prawer@physics.unimelb.edu.au

http://www.unimelb.edu.au

# People's Republic of China

3. Institute of Mechanics of Chinese Academy of Sciences, Beijing

(Chen P.W.)

E-mail: pwchen@imech.ac.cn

4. Jilin University, Changchun

(Jiang Q., Liu H.W., Gao C.X.)

E-mail: jiang@ilu.edu.cn

liuhw@mail.jlu.edu.cn

sklshm@mail.jlu.edu.cn

5. Lanzhou University, Lanzhou

(He Deyan, Shao Lexi, Gong Weibin)

E-mail: hedy@lzu.edu.cn

6. Lanzhou Institute of Chemical Physics

(Xu Kang)

E-mail: kaNGXU@lsl.ac.cn

7. Zhongshan University, Guangzhou

(Chen J., Deng S.Z., Chen J., Yu Z.X., Xu N.S.)

E-mail: stsxns@zsu.edu.cn

#### **Finland**

8. OY ITCC Ltd International Trade Centre Corporation, Helsinki

(Norlamo P., Gerchoun O.)

E-mail: vaunti@co.inet.fi

#### France

9. Ecole Nationale Superieure de Chimie, Mulhouse,

(Donnet J.-B)

E-mail: jb.donnet@igclab.com

# Germany

10. Dr. Ulrich Gerling Co.GmbH, Hilden

(Gerling U., Gath W.)

E-mail: gaeth@dgc-gmbh.com

http://www.dgc-gmbh.com

11. VTT GmbH - Verschleißteil Technik, Langenhagen,

(Post H.),

E-mail: info@vtt.de

8. Z.E. Elektronenmikroskopie, Universitat Ulm, 89069 Ulm.

(Banhart F.)

E-mail: Florian.Banhart@physik.uni-ulm.de

# Japan

13. Kobe University

(Hayashi S., Fujiie M., Akamatsu K., Deki S.)

E-mail: hayashi@eedept.kobe-u.ac.jp

14. Nanocarbon Research Institute Ltd., Chiba

(Osawa E.)

E-mail: osawa@nano-carbon.com

http://www.nano-carbon.com/index2.htm

15. Nanomaterial Processing Laboratory, RIKEN, Saitama

(S. Tomita)

E-mail: s-tomita@riken.go.jp

# 16. Tokyo Institute of Technology, Tokyo

(Enoki T., Affoune A.M., Prasad B.L.V., Sato H.)

E-mail: tenoki@chem.titech.ac.jp

#### 17. Japan Atomic Energy Research Institute, Takasaki Branch

(Naramoto H.)

E-mail: naramoto@taka.jaeri.go.jp

# Republic Belarus

## 18. Engineering Centre "Plasmoteg", Minsk,

(Kurmashev V.I.)

E-mail: pec@mserv.bas-net.by

# 19. Joint Stock Company "Sinta", Minsk

(Gubarevich T.)

E-mail: sinta92@yandex.ru

#### Russia

#### 20. Biysk Technological Institute, Biysk

(Vereshchagin A.L.)

E-mail: val@bti.secna.ru

#### 21. Boreskov Institute of Catalysis, Novosibirsk

(Butenko Y.V., Kuznetsov V.L., Zilberberg I.L., Chuvilin A.L.)

E-mail: vkuz@catalysis.nsk.su

kuznet@catalysis.nsk.su butenko@catalysis.nsk.su

#### 22. Central Research Institute of Materials, St. Petersburg

(Gordeev S.K.),

E-mail: carbid@pop3.rcom.ru

# 23. Federal Research Production Center "Altay", Biysk

(Petrov E., Sakovich G.)

E-mail: post@frpc.secna.ru evg@frpc.secna.ru

evg@irpc.secna.ru

# 24. Institute of Biophysics SB RAS, Krasnoyarsk

(Belobrov P.I.)

E-mail: pit@ktk.ru

# 25. Institute of General Physics RAS, Moscow

(Ralchenko V.G., Vlasov I., Obraztsova E.D.),

E-mail: ralchenko@nsc.gpi.ru ralchen@kapella.gpi.ru

vlasov@kapella.gpi.ru elobr@kapella.gpi.ru

# 26. Institute for Hydrodynamics, Novosibirsk

(Titov V.M., Ten K.A.),

E-mail: titov@hydro.nsc.ru ten@ hydro.nsc.ru

# 27. Institute of Inorganic Chemistry, Novosibirsk

(Yur'ev G.S., Okotrub A.V., Bulusheva L.G.)

E-mail: spectrum@che.nsk.su

#### 28. Institute of Physical Chemistry, Moscow

(Spitsyn B.V.),

E-mail: lmm@phyche.ac.ru;

# 29. Ioffe Physico-Technical Institute RAS, St. Petersburg

(Vul' A.Ya., Aleksenskii A.E., Baidakova M.V., Dideikin A.T., Yagovkina M.A.,

Osipov V.Yu., Siklitsky V.I.)

E-mail: AlexanderVul@mail.ioffe.ru

http://www.ioffe.ru

# 30. Krasnoyarsk Scientific Centre SB RAS, Krasnoyarsk

(Koretz B.)

E-mail: prcom@kgtu.runnet.ru

# 31. Krasnoyarsk Science Centre, Krasnoyarsk

(Chiganova G.A., Chiganov A.S.)

E-mail: Chiganov@akadem.ru vepom@kgtu.runnet.ru

# 32. Moscow State University, Moscow

(Kulakova I.I.)

E-mail: Kulakova@petrol.chem.msu.ru

# 33. Lebedev Physical Institute, Moscow

(Gorelik V.S., Artjomov A.S.),

E-mail: artpol@mail1.lebedev.ru

# 34. Scientific Research Institute for Synthetic Rubber, St. Petersburg

(Vozniakovskii A.P.).

E-mail: alcen@comset.net

# 35. Ulyanovsk State University, Ulyanovsk

(Mikov S.N., Igo A.V.)

E-mail: mkov@sv.uven.ru

#### Ukraine

#### 36. Bakul Institute for Superhard Materials, Kiev

(Bogatyreva G.P., Bochechka A.A.)

E-mail: bogatyreva@ism.kiev.ua

ism1@kibor.kiev.ua

#### **USA**

#### 37. Argon National Laboratory

(Gruen D., Aucello O., Carlisle J.)

E-mail: gruen@anlchm.chm.anl.gov

http://www.anl.gov

#### 38. Case Western Reserve University, Cleveland

(Segall B., Albu T.V., Anderson A.B., Angus J.C.)

E-mail: bxs2@po.cwru.edu

http://www.cwru.edu

### 39. International Technology Center, Research Triangle Park

(Shenderova O.)

E-mail: oshenderova@itc-inc.org

http://www.itc-inc.org

#### 40. Lawrence Livermore National Laboratory

(Galli G., Ree F., Glosli J., Winter N., Viecelli J., Bastea S., Wu C., Raty J.-Y.,

Bostedt C., van Buuren T.W., Terminello L.J.)

E-mail: galligygi1@llnl.gov

http://www-phys.llnl.gov

#### 41. Los-Alamos National Laboratory

(Shaw M.S.)

http://www.lanl.gov

# 42. Nanostructures and amorphous materials, Inc, Los Alamos, New Mexico

(Huang J.-G.)

E-mail: nanoam@msn.com

# 43. Naval Research Laboratory

(Butler J., Daulton T.) http://www.nrl.navy.mil

# 44. North Carolina State University, Raleigh

(Brenner D., Hren J., Zhirnov V., Kvit A., Jaeger D., Tyler T., Kang D., Bilbro G., Shenderova O., Areshkin D.) http://www.ncsu.edu

# 45. UK Abrasives Inc, Northbrook, Illinois

(Slobodsky V.)

E-mail: vslobodsky@ukabrasives.com

# **Source Index**

# List of Journals

Acta Phys. Sin.-Ch. Ed. - Acta Physica Sinica (Publisher: Chinese Physical Soc.)

Adv. Mater. - Advanced Materials

Anal. Chem. - Analytical Chemistry

Angew. Chem. Int. - Angewandte Chemie: International Edition

Annu. Rev. Mater. Sci. - Annual Review of Materials Science

Appl. Phys. Lett. - Applied Physics Letters

Appl. Surf. Sci. - Applied Surface Science

Astron. Astrophys. - Astronomy and Astrophysics

Astronom. vestnik - Astronomicheskii vestnik (in Russian)

Astrophys. J. - Astrophysical Journal

Astrophys. Space Sci. - Astrophysical Space Science

Bioconjugate Chem. - Bioconjugate Chemistry

Bull. Phys. News. - Bulletin of Physics News

Bull. Soc. Chem. Fr. - Bulletin de la Societe Chomique de France

Ceram. Eng. Sci. Proc. - Ceramic Engineering and Science Proceedings (CESP)

Chem. Mater. - Chemistry of Materials

Chem. Phys. - Chemical Physics

Chem. Phys. Reports. - Chemical Physics Reports

Chin. J. High Pressure Phys. - Chinese Journal of High Pressure Physics

Chin. J. Mater. Res. - Chinese Journal of Material Research

Chin. Phys. Letters. - Chinese Physics Letters

Chin. Sci. Bull. - Chinese Science Bulletin

Colloid J. - Colloid Journal

Combust. Explos. Shock Waves. - Combustion Explosion and Shock Waves

Computer Modeling & Eng. Sci. - Computer Modeling & Engineering Science

Critic. Rev. Sol. State Mater. Sci. - Critical Reviews in Solid State and Materials Sciences

Cryst. Res. Technol. - Crystal Research and Technology

Diamond Films Technol. - Diamond Films and Technology

Diamond Relat. Mater. - Diamond and Related Materials

Diffus. Defect Data - Diffusion and Defect Data

Dokl. Akad. Nauk USSR - Doklady Akademii Nauk USSR (in Russian)

Electrochem. Soc. Proceed. - Electrochemical Society Proceedings

Eur. Phys. J. - European Physical Journal

Europ. Polymer J. - European Polymer Journal

Fiz. Goren. Vzryva - Fizika Gorenija i Vzryva (in Russian)

Geochim. Cosmochim. Acta - Geochimica et Cosmochimica Acta

High. Temp. Mater. P-Us. - High Temperature Material Processes

Inorg. Mater. -Engl. Tr. - Inorganic Materials (English translation of Neorganicheskie Materialy)

Int. J. Mod. Phys. B. - International Journal of Modern Physics B

Izv. Ross. Akad. Nauk. Khim. - Izvestiya Rossijskoi Akademii Nauk, Seriya Khimicheskaya

- J. Amer. Ceram. Soc. Journal of American Ceramic Society
- J. Anal. Chem. Journal of Analytical Chemistry
- J. Appl. Phys. Journal of Applied Physics
- J. Astrophys. Space. Sci. Astrophysics and Space Science
- J. Balkan Tribological Association. Journal of Balkan Tribological Association
- J. Chem. Phys. Journal of Chemical Physics
- J. Chem. Soc. Faraday Trans. Journal of the Chemical Society Faraday Transactions

Chem. Vap. Deposition. - Chemical Vapor Deposition

Comp. Aided Design. - Computer Aided Design:

- J. Cryst. Growth. -- Journal of Crystal Growth
- J. Electrochem. Soc. Journal of Electrochemical Society
- J. Electron Microsc. Journal of Electron Microscopy
- J. Exper. Theor. Phys. Journal of Experimental and Theoretical Physics
- J. Mater. Chem. Journal of Materials Chemistry
- J. Mater. Res. Journal of Materials Research
- J. Mater. Sci. Letters. Journal of Materials Science Letters
- J. Metastable and Nanocrystalline Mat. Journal of Metastable and Nanocrystalline Materials
- J. Nanoscience and Nanotech. Journal of Nanoscience and Nanotechnology
- J. Non-Cryst. Solids. Journal of Non-Crystalline Solids
- J. Optoelectr.Adv. Mater. Journal of Optoelectronics and Advanced Materials
- J. Phys. Chem. Journal of Physical Chemistry
- J. Phys. Chem. Sol. Journal of Physical Chemistry of Solids
- J. Phys. D Appl. Phys. Journal of Physics D-Applied Physics
- J. Phys. Soc. Jpn. Journal of the Physical Society of Japan
- J. Vac. Sci. Tech. A. Journal of Vacuum Science and Techology. A
- J. Vac. Sci. Technol. B. Journal of Vacuum Science and Techology. B

JETP Lett. – JETP Letters (Translation of Pis'ma v Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki)

Jour. Phys: Condens. Matter. - Journal of Physics. Condensed Matter

Jpn. J. Appl. Phys. - Japanese Journal of Applied Physics

Khim. Fiz. - Khimicheskaya Fizika (in Russian)

Mat. Res. Soc. Symp. Proc. - Materials Research Society Symposium Proceedings

Mater. Lett. - Materials Letters

Mater Res. - Materials Research

Mater. Sci. Eng. - Materials Science and Engineering

Mendeleev Communs. - Mendeleev Communications.

Meteorit. Planet. Sci. - Meteoritics & Planetary Science.

Mol. Cryst. Liquid Cryst. Sci. and Tech. - Molecular Crystals and Liquid Crystals Science and Technology

Mol. Mater. - Molecular Materials

Mol. Simulat. - Molecular Simulation

MRS Bulletin. - Materials Research Society Bulletin

Nanostruct. Mater. - Nanostructured Materials

New Diamond Front. Carbon Technol. - New Diamond and Frontier Carbon Technology

Nov. Prom. Tehnol. - Novosti Promishlennoi Tehnologii (in Russian)

Nucl. Instrum. Methods - Nuclear Instruments and Methods in Physics Research

Optich. Zhurnal. - Opticheskii Zhurnal (in Russian)

Particulate Sci. Tech. - Particulate Science and Technology

Phil. Mag. - Philosophical Magazine

Phil. Mag. Lett. - Philosophical Magazine Letters

Phys. Chem. Minerals. - Physics and Chemistry of Minerals

Phys. Chem. Chem. Phys. - Physical Chemistry Chemical Physics

Phys. Rev. B- Pysical Review B

Phys. Rev. Lett. - Pysical Review Letters

Phys. Scripta - Physica Scripta

Phys. Solid State - Physics Solid State (English translation of Physica Tverdogo Tela, in Russian)

Phys. Stat. Sol. B. - Physica Status Solidi Ser. B

Rep. Prog. Phys. - Reports on Progress in Physics

Rus. Chem. Rev. - Russian Chemical Reviews (English Translation)

Sol. State Electron. - Solid-State Electronics

Sol. State Phenom. - Solid State Phenomena

Spectrochim. Acta. A - Spectrochimica Acta A

SPIE. - Journal of the Society of Photo-optical Instrumentation Engineers

Surf. Coat. Technol. - Surface and Coatings Technology

Surf. Rev. Lett. - Surface Review Letters

Surf. Sci. - Surface Science

Tech. Phys. Lett. - Technical Physics Letters (English translation of Pisma v Zhurnal

Tekhnicheskoi Physiki, in Russian)

Thin Sol. Films. -Thin Solid Films

Tribol. Trans. - Tribology Transactions

Usp. Khim. - Uspekhi Khimii (in Russian)

Z. Kristallogr. - Zeitschrift für Kristallographie

Zhyrnal Vses. Khim. Obschestva – Zhyrnal Vsesojuznogo Khimicheskogo Obschestva

# **Author Index**

Abaev M.I.	219	Babaev V.G.	168 278 380 302 505
Abe H.	515, 526, 528	Babina V.M.	168, 278, 389, 392, 505 168, 505
Adachi H.	537	Babyshkin Y.A.	052
Adadurov G.A.	017	Bacsa W.S.	560
Adamchuk V.K.	219	Badaev F.Z.	280
Adriaenssens G.J.	181, 211, 271, 313	Badziag P.	157
Adrianova T.N.	275	Badzian A.	481
Afanas'ev V.V.	271	Baidakova M.V.	180, 181, 183, 184, 204,
Affoune M.	283, 488	Duraukota III. V.	205, 248
Ager III J.W.	381	Baik ES.	568, 570
Agibalova L.V.	274, 276	Baik YJ.	568, 570
Ahmad S.	511	Baldereschi A.	142, 502
Ahn J.	325	Bandow S.	504
Ajayan P.M.	545, 549, 553, 555	Banhart F.	113, 513, 520, 535, 542,
Akamatsu K.	533		545, 549, 551, 552, 553,
Akimova L.N.	082		554, 555
Albella J.M.	332	Baonza V.G.	291
Albu T.V.	309	Baraboshkin K.S.	450, 451
Aleksandrov M.M.	633, 637	Baras C.	072, 303
Aleksandrov M.N.	174	Barborini E.	327
Aleksenskii A.E.	180, 183, 205, 211, 219,	Barnard A.S.	137, 138, 144, 145, 146,
	248, 271		147, 226, 227, 562, 563,
Aleshaev A.N.	301		564, 566
Alexandrou I.	519, 527	Bassett W.A.	004, 132
Alexenko A.E.	389	Bastea S.	049
Alimova A.N.	284, 364, 406	Bates S.	606
Allamandola L.J.	598	Batrakov A.M.	301
Allen J.E.	602	Bazaly G.A.	089, 246
Almlof J.	007	Bello I.	091, 355
Amaratunga G.A.J.	391, 519, 527 500	Belobrov P.I.	228, 230, 236, 250, 284,
An B.	077		285, 364, 417, 421, 460,
Ananiyan A.V. Anders A.	381	Reluguing N N	461, 462, 475, 604 418
Anders E.	003, 005	Belyavina N.N. Ben-Chorin M.	396
Anders E.B.	600	Bennett A.	324
Anders S.	381	Ber B.Ya.	211
Anderson A.B.	309	Bernatowicz T.J.	594
Anderson L.W.	375	Besedina O.A.	279, 280
Andersson O.E.	504	Bhattacharyya S.	350
Ando T.	308	Bhusari D.M.	242, 356
Andreev V.D.	019, 182,	Bi B.	192
Andreyev V.D.	187	Bilbro G.L.	281
Andrianova T.N.	366, 443	Birrell J.	331, 350
Angus J.C.	309	Biryukov A.V.	452
Anikeeva O.B.	232, 485	Bismayer U.	176
Anisichkin V.F.	054, 055, 069, 087, 088	Blatter A.	405
Annis K.	509	Blaut-Bachev A.N.	235
Antipenko A.G.	020, 062	Bochechka A.A.	193, 266, 412, 418, 420,
Antonyuk V.S.	446		426
Aoyagi Y.	110, 111, 210	Bodrova V.S.	429, 434
Arakawa M.	573	Bogatyreva G.P.	089, 105, 106, 166, 190,
Arden J.W.	596		246, 249, 254, 255, 273,
Areshkin D.	135, 136, 140, 143		467, 470
Arora A.K.	288	Bogy D.B.	381
Asher S.A.	292	Bondar' B.C.	462, 463
Asmussen J.	192	Bondar V.A.	464
Auciello O.	331, 339, 346, 350, 353, 372, 455, 477, 478	Bondar V.S.	454, 456, 457, 458, 460, 461
Averin A.N.	482	Borimchuk N.I.	186
Ayers M.R.	507	Bormett R.W.	292
1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -		DOINGILIAN.	M-7 is

			· talifor irraon
Borodina L.M.	015	Chang R.P.H.	338, 372, 379, 380, 477
Bostedt C.	139	Chang Y.H.	493
Bouilov L.L.	392	Chang Y.K.	242, 356
Bourgeois L.N.	178	Charai A.	541
Boustie M.	505	Chattopadhyay S.	318
Bower C.	340 583	Chawla S. Cheburina L.A.	384 253
Braatz A.	576		339
Bradley J.P. Bratilov B.I.	614	Chechen R. Chen CF.	578
Brauneck U.	404	Chen G.	237, 348
Bregadze A.Yu.	392, 389	Chen J.	196, 203, 357, 360, 361
Brenner D.W.	022, 135, 136, 140, 143,	Chen J.S.	348
Dicinici D. W.	565	Chen K.H.	242, 318, 344, 356
Breskin A.	339	Chen L.C.	242, 318, 344,
Breusov O.N.	010, 017	Chen M.	328
Briddon P.R.	245	Chen P.W.	289, 536
Britun V.F.	428	Chen Q.	286, 351, 395, 476, 536
Brown I.G.	381	Chen Y.T.	213
Brownlee D.E.	576	Cheng CL.	267, 335, 578
Brylyakov P.M.	066, 085, 174, 261, 280,	Cherian K.A.	572
• •	407, 617, 623, 623, 624,	Chernyh S.A.	407
	630, 633, 637	Chernysheva I.S.	470
Buehler J.	396	Chhowalla M.	519, 527
Buerki P.R.	115	Chien F.Z.	242
Bukaemskii A.A.	456, 460, 461, 462	Chiganov A.S.	167, 170, 268, 626
Bulcock S.	250	Chiganova G.A.	167, 170, 268, 269, 277,
Bulusheva L.G.	302, 523, 531	C1: 17.4	316, 454, 626
Bundy F.P.	132	Chiganova V.A.	052
Burian A. Burkat G K.	512	Chiu H.T.	495 442
Burkhard G.	401, 402, 403 107	Chizhik S.A. Chkhalo N.I.	442 451
Bursill L.A.	093, 149, 178, 188, 99,	Cho K.	234
Duisiii L.A.	212, 214, 216, 228, 230,	Choi W.B.	378
	240, 250, 297	Chow GM.	466
Buseck P.R.	594	Christiansen S.H	342, 345
Bushman A.V.	064	Chubun N.N.	284
Busmann H.G.	353, 404, 478	Chukhaeva S.I.	253, 257, 423, 482, 612
Butenko Yu.V.	079, 133, 195, 200, 202,	Chuvilin A.L.	058, 079, 133, 174, 202,
	232, 233, 302, 485, 522,		232, 233, 241, 302, 485,
	523, 531, 543, 544, 547,		523, 543, 544, 547, 548,
	548, 558		558, 618
Butler J.E.	191, 318, 453, 455	Cleri F.	256
Bychin N.V.	407	Coffman F.L.	306
Bystrova N.A.	100	Cohen H.	396
Cabioc'h T.	513, 516, 517, 521, 525	Collins C.B.	390
Cai W.	455	Compton R.G.	319, 320
Cai Y.	296	Comtet G.	342
Camelio S.	521	Constant L.	541
Canning A.	206, 259	Corrigan T.	372
Cao L.M.	094	Corrigan T.D.	338, 351, 379, 380, 477
Cao R. Cao W.	306 507	Cota-Sanchez G. Couris S.	114 471
Car R.	134, 206, 207, 208, 259	Couvrat P.	365
Carlisle J.A.	292, 305, 331, 350, 455	Craighead H.G.	191
Carlson R.M.K.	090	Csencsits R.	299, 305, 383, 445
Carroll J.J.	390	Cuomo J.J.	378
Carstanjen H.D.	551	Curtiss L.A.	141, 163, 164, 311, 312,
Catellani A.	495	Cartios D.A.	350, 367, 373
Chaikovskii E.F.	011	d'Hendecourt L.B.	592
Chalo N.I.	450	Dahl J.E.	090
Chang D.J.	440	Dai D.Y.	094
Chang HC.	213, 215, 267, 296, 574,	Dai Z.R.	576
	578	Danilenko N.V.	420, 425

Danilenko V.V.	061, 063, 065, 084, 106,	Eisenhour D.D.	594
D 21. A.2	425	Ekimov A.G.	419
Danilov A.I.	615	Ekimov E.A.	409
Danishevskii A.	124	Eklund P.C.	201, 489
Daulton T.L.	112, 594, 639	Ekstrom T.C.	417
Davanloo F.	390	Elin V.I.	063, 084,
Davydov V.Y.	205	Elin V.N.	065
De Laeter J.R.	580	Eliyahu A.	396
DeHeer W.A.	560	Elliot B.R.	503, 506
Deki S.	533	Ellis W.P.	157
Delmotte L.	303	Endo M.	201, 486, 496, 514
Demchenko A.N.	443	Enoki T.	201, 283, 486, 488, 489,
Dementjev A.P.	228, 230, 247, 422		490, 491, 494, 496, 499,
Dementjev P.	300		504
Denanot M.F.	517	Erdemir A	353, 445
Deng S.Z. Dennis J.K.	196, 203, 357, 360, 361	Ershov A.P.	008, 009, 070, 287
Derendyaev B.G.	282 087	Ersoy D.A.	125, 126, 353
Detkov P.Ya.		Eryomenko N.K.	613
Detkov F. Fa.	098, 230, 252, 257, 284, 364, 405, 423, 454, 471,	Evans W.J.	291
	482, 612	Ewels C.P.	245
DeVita A.	206, 259	Falaleev O.V.	236
DeVries R.C.	481	Faleev N.N. Fan S.	184
d'Hendecourt L.	585	Fang L.	571 343
Dideikin A.T.	180, 248, 271	Farcasiu M.	640
Diederich L.	285	Fedorchenko M.F.	450
Dikov I.	604	Fedorchenko M.V.	451
Dikov Yu.P.	590	Fedorov V.B.	030
Dimitrijevic S.	603	Fedotov M.G.	301
Ding J.	053	Feeney S.S.	466
Ding M.Q.	339, 353, 378,	Fehlhaber R.P.	212, 216, 240, 297
Ding Y.S.	536	Feng L.X.	469
Dluzewski E.	419	Feng Y.T.	357
Dobos L.	095	Feng Z.	381
Dolgushev N.V.	151	Fenske G.R.	445
Dolgushin D.S.	054	Feygelson T.	191, 318
Dolmatov V.Yu.	023, 024, 031, 074, 251,	Fijishima A.	567
	272, 274, 276, 401, 402,	Filatov L.I.	058, 059, 098, 482, 612
	403, 411, 415, 424, 429,	Filippova E.V.	615
	431, 434, 438, 459, 479,	Fink J.	525
Danie C	632, 633, 636, 637	Finskaya V.M.	427
Dong C.	232, 485, 531	Fisenko A.V.	577, 584, 591, 593
Donnet JB.	026, 072, 076, 103, 303,	Fomina L.V.	317
Dore J.C.	546 512	Foord J.S.	319, 320, 324
Dorschner J.	595	Fortov V.E.	064, 505
Dorzhpalamyn P.	172	Foster C.M.	388
Dravid V.P.	503, 506	Fousson E.	072, 103, 303
Dremin A.N.	077	Frankland S.J. Frauenheim T.	140
Drobishev V.N.	010, 014, 017	Frenklach M.	141, 158, 311
Dryomin A.N.	020, 062, 086	r renkiacii ivi.	116, 117, 118, 119, 120,
Dub S.N.	418	Frolov V.D.	121, 122, 627 177, 369, 422, 474, 475
Dubitsky G.A.	075, 315	Fugaciu F.	539
Dubravin A.M.	442	Fujii M.	512, 518, 529, 530, 532,
Ducati C.	327	1 ug. 111.	533, 537, 538, 540, 547,
Duda T.M.	165, 310, 414		548
Dujardin G.	342	Fujimura T.	024, 272, 401, 411
Eckhardt A.	026, 076, 103, 303, 546	Fujita M.	501
Eda H.	444	Fukuda H.	295
Edrei R.	342	Fukuyama S.	500
Efimov O.A.	613	Fullerton A.L.	178
Egawa S.	264, 265	Galimov E.M.	590
Ehret G.	541		

			Author Index
Galli G.	048, 060, 134, 139, 142,		338, 339, 346, 350, 351,
	206, 207, 208, 259, 260,		352, 353, 367, 368, 372,
	495, 502, 508, 510		373, 374, 375, 376, 377,
Gamanovich D.N.	073		379, 380, 383, 385, 387,
Gamarnik M.Y.	156		388, 404, 445, 455, 477,
Gao C.X.	094		478, 610
Gao X.	333	Grzanka E.	176
Gardos M.N.	353, 478	Gubareva N.A.	013
Gargin V.G.	266, 418, 420	Gubarevich T.M.	073, 172, 251, 317, 438,
Garrell R.L.	466		483, 617, 623, 624, 628,
Gavriliuk B.	419	Cubanasiah V D	632, 635, 636, 637, 638
Gavrilova V.S.	193, 255 466	Gubarevich V.D. Gubin S.A.	085, 280, 407, 067, 082
Gelman A. Genge M.J.	576	Guerin D.	397
Gerbi J.	455	Guerin P.	517, 521
Gibson J.M.	331	Günther B.	235
Gierlotka P.	419	Guo W.T.	328, 333
Gierlotka S.	176, 409	Gupta S.	322, 329
Girard J.C.	521	Guschin V.A.	619
Givargizov E.	235, 339	Guseva M.B.	168, 278, 389, 392, 505
Gleiter H.	256	Gutakovskii A.K.	133, 544
Glinka Yu.D.	213, 215	Guzmann I.	158
Glosli J.N.	047, 048, 049, 129, 130,	Gvyazdovskaya V.L.	089, 106, 246, 254, 255,
	131	,	467
Gnaser H.	380	Gygi F.	260, 510
Goeting C.H.	319	Habermann T.	406
Gogotsi Y.	123, 125, 126, 127	Haerle R.	142, 502
Göhl A.	235, 406	Haggerty S.E.	586
Goldade A.V.	442	Hahn J.H.	161, 162
Golden M.S.	525	Halicioglu T.	155
Golding B.	192	Hamada H.	444
Golshani F.	433	Hamers R.J.	453, 455
Golubev V.G.	393	Han P.	433
Golubeva E.S.	081 132	Han W.	571
Goncharov A.F. Gong W.	237	Harigaya K. Hatta A.	491, 492 398, 399
Gontar A.G.	266	Hayashi S.	512, 518, 529, 530, 532,
Gordeev S.K.	124, 220, 236, 369, 408,	nayasın ö.	533, 537, 538, 540, 547,
Gordeer B.R.	416, 417, 421, 422, 430,		548
,	435, 437, 452, 465, 475,	He D.	237
	604	He D.Y.	333
Gordillo-Vazquez F.J.	332	Не М.	094
Gorelik V.S.	217, 225, 293,	Heera V.	095
Gorjacheva L.	472	Heggie M.I.	245, 302, 523, 531
Gorschkov A.	472	Heiman A.	330, 342, 345
Gorshkov A.S.	443	Hellner L.	342
Goryacheva L.V.	443	Hemley R.J.	132
Gouzman I.	342, 359	Henning T.	583, 588, 589, 595
Goyette A.N.	350	Henrard L.	521, 550
Goyette N.	375	Herbst T.M.	598
Grady M.M.	596	Hermann H.	539
Graupner R.	238	Hess P.	318
Grechinskaya A.	124	Heymann D.	581
Grehan K.J.	319, 320	Hian L.C.	319, 320
Greiner N.R.	071,	Hida A.	110, 111
Grieco W.J.	534	Hikita M.	532, 533
Grobet P.J.	181	Hill H.G.M.	576, 592
Gromnitskaya E.L.	409	Himpsel F.	305
Gromov M.D.	582	Hirai H.	108
Groning O.	364	Hiraki A.	336, 394, 398, 399
Grudinkin S.A. Gruen D.M.	393	Hiramatsu M.	324
Gruca D.W.	025, 141, 163, 164, 292, 299, 305, 311, 312, 331,	Hiraoka H. Hishiyama Y.	514 201, 488, 489, 504
	277, 303, 311, 314, 331,	anomyania 1.	201, 400, 407, 304

Adiiloi iiidex			
Hnatyszyn H.J.	466	Jimbo T.	321
Hoffman A.	158, 330, 342, 345, 359	Jimenez I.	305
Hondoh T.	573	Jin S.	340, 371, 607, 609
Hong C.	390	Johnson D.L.	506
Hong S.P.	337	Johnson J.D.	002, 071
Horner D.A.	163, 164, 367	Jones A.P.	585, 592
Host J.J.	503, 506	Joswiak D.J.	576
Houston B.H.	191	Jun S.	053
Howard J.B.	534	Kaburagi H.	504
Howard W.	116, 117, 120, 121	Kaburagi Y.	201, 488, 489
Hren J.J.	143, 378, 468	Kaito C.	573
Hrienko A.F.	118	Kalashnikov E.G.	030
Hsieh H.H.	242, 356	Kalinkin A.V.	154
Hu ChG.	343	Kamo M.	308
Hu J.Q.	334	Kamyshenko V.	126
Huang D.	116, 117, 120, 121, 122	Kaneko K.	490
Huang F.	053	Kang D.	468
Huang F.L.	286, 289, 536	Kang X.	298
Huang JH.	341	Kapoor S.	306
Huang WS.	192	Karabutov A.V.	177, 339, 369, 421, 422,
Huang Y.	339		474
Huczko A.	114	Karabutov V.	475
Huggins K.E.	433	Kardanov A.A.	593
Hunt A.J. Huss G.R.	507	Katagiri G.	224, 294, 295
Hvostov V.V.	580, 597	Kaufman P	640
Hwang J.H.	278	Kawamura K.	012
Hwang N.M.	503, 506	Kawatsu N.	490, 491
Iakoubovskii K.	161, 162 181, 211, 313	Keblinski P.	256
Iarlori S.	260, 508, 510	Keller N.	522
Ide T.	370	Kelly M.	306
Idrisov I.G.	279	Kematick R.	116, 121, 122
Igami M.	501	Kempiński W. Khairulin R.A.	248
Ignatchenko A.V.	279, 623		133, 202, 544
Igo A.V.	217, 225, 293	Khanin V.V. Khripkova L.D.	358
limura K.	519	Khripkova E.D. Khvostov V.V.	414 389, 392, 505
Ikeda Y.	265	Kirvosiov V.V. Kichambare P.D.	369, 392, 303 344
Ilnitskaya G.D.	166, 254	Kimoto K.	229, 349
Inagaki M.	034	Kimura Y.	573
Ishchenko E.V.	246, 470	Kireitseu M.	413
Ishida H.	224, 294, 295	Kirk M.A.	112, 346, 639
Ishitani A.	224, 294, 295	Kiselev N.I.	417
Ismat Shah S.	397	Kitahara H.	608, 620
Ito T.	398, 399	Kluev A.	419
Ivanov A.V.	590	Klyubin V.V.	274, 276
Ivanov Yu.N.	154	Knickerbocker T.	453, 455
Ivanov V.	642	Knowles K.M.	391
Jaeger C.	<b>5</b> 95, 583	Knupfer M.	525
Jakovleva E.	472	Koba R.	116, 117, 120, 121, 122,
Jamieson D.N.	092, 093, 149, 214, 290		627
Jaouen M.	513, 516, 517, 521	Kobori R.	490
Jardin C.	124	Kochanski G.P.	340, 371, 607, 609
Jayatissa A.	353, 478	Koga K.	185
Jeon D.	568, 570	Koga Y.	337
Jeon JD.	127	Koguchi Y.	110, 111
Jeschke G.	583	Kohler T.	158
Ji S.	218, 221	Kokkinaki O.	471
Jiang K.	221	Kolchemanov N.A.	252
Jiang N.	336, 398	Kolomiichuk V.N.	079, 174, 202, 080
Jiang Q.	150, 197	Komarov V.F.	027, 045, 046, 085, 171,
Jiang T.	218, 223		173, 407, 448, 449, 450,
Jiao S.	346		451, 480, 608, 620, 625,
Jiazheng Z.	298		633

			7 tatrior irraex
Komatsu S.	229, 349	Lakin E.	330
Kompan M.E.	220	Lambin P.	521, 550
Komvopoulos K.	381	Lange H.	114
Kondo K.	108	Lapovok V.N.	038
Kononenko T.V.	400	Larionova I.S.	454,628, 632, 635, 636,
Konov V.I.	177, 339,369, 386, 422,	parionova 1.5.	637, 638
Konov v.i.	474, 475, 548	Lasseter T.L.	455
Konstantaki M.	471	Lau C.H.	324
	087	Lau S.P.	348, 362
Koptyug V.A. Koretz A.	209	Lau 3.7. Lawler J.E.	375
	631		642
Korobov D.Yu.		Lazanov S.	
Korobov Yu.A.	613, 631	Lebedev B.V.	104
Korotkevich S.V.	442	leBolloch D.	512
Korovin S.	471	Lee C.S.	091, 355, 493
Korzhenevskii A.P.	073	Lee I.P.	574
Koscheev A.P.	582	Lee M.R.	591, 596
Kossovsky N.	466	Lee S.T.	091, 158, 355
Kostrova L.N.	459	Lee S.W.	570
Kostyukov S.I.	450, 451	Lee Y.T.	296, 574
Kostyukova N.M.	317, 628, 635, 637, 638	Lei Q.S.	333
Kouchi A.	573	Lemoigne C.	026, 076
Koudoumas E.	471	LeMoigne C.	546
Kovalev N.F.	429	Lenormand F.	541
Kovrigin S.A.	605	Leshev D.V.	148
Kozharskij S.P.	625	Letunovsky V.	443, 472
Kozubowski J.A.	409	Leutwyler S.	115
Kozyrev N.V.	027, 068, 081, 608, 620	Levintova E.A.	438
Kozyrev S.V.	148	Lewis R.S.	003, 005, 112, 580, 594,
Kramskoj Yu.I.	482		597, 639
Krauss A.R.	292, 299, 305, 338, 346,	Leγ L.	238
	351, 368, 372, 374, 375,	Leypunskiy O.I.	021
	376, 377, 379, 380, 383,	Li J.C.	150
	385, 387, 388, 445, 477,	Li J.Q.	328, 333, 091, 571
	478	Li S.	218
Krauss R.	339, 350, 353	Li Y.C.	094
Kronmuller H.	551	Li Y.J.	093, 348
Kruger A.	393	Liang J.	097
Kruglyakov E.P.	450, 451	Liao KJ.	343
Kryukov N.A.	219	Liao M.Y.	334
Kudryavtsev Y.P.	100	Lifshitz Y.	091, 158
Kuettel O.M.	285	Likholobov V.A.	174
Kukino S.	108	Lin E.	102, 159, 061, 075, 104,
Kulakova I.I.	028, 096, 172, 251, 262,	<b>2</b> 2.	270, 315, 436
Tentanova 1.1.	382	Lin I-N.	341
Kulipanov G.N.	301	Lin K.W.	213, 215
Kuo SJ.	296	Lin RW.	267
Kupershtokh A.L.	008, 287	Lin S.H.	213, 215
Kurdyumov A.V.	010, 186, 428	Lin S.T.	242, 344
Kurokawa Y.	210	Lipp M.J.	291
Kuropatkin V.G.	436	Lipp M.J. Litster J.	572
Kusakabe K.	264, 265	Litvinov B.V.	058, 482
	364		493
Kuttel O.M.		Liu C.S.	
Kuzmenko E.F	310	Liu J.	441
Kuznetsov V.L.	079, 133, 174, 195, 200,	Liu S.	387, 388
	202, 222, 232, 233, 241,	Liu S.G.	090
	302, 471, 485, 522,	Ljachov N.Z.	301
	523, 531, 543, 544, 547,	Lojkowski W.	409
	548, 558, 618	Lopez J.M.	332
Kvit A.V.	468	Lorenzana H.E.	291
Kyutt R.	124	Loss R.D.	580
Ladner E.	640	Loubnin E.N.	222, 386, 400, 405, 548
Lai J.Y.	335	Loutfy R.	603
Lai P.F.	199	Lucas A.A.	550

Author Index			
Luckjanchikov L.A.	301	Maukana V	212
Lugmair G.W.	580	Meykens K.	313
Luo J.		Migin A.N.	605
	388	Mikhalovsky S.V.	473
Luthi H.P.	007	Mikov S.N.	217, 225, 293
Lyamkin A.I.	009, 013, 029, 052, 070,	Milani P.	327
	619	Miller J.	641
Lyutovich Y.	113, 535, 545, 551	Ming T.	005
Maas R.	580	Mironov E.	209
Maeda H.	264	Mishnev S.I.	301
Maeda K.	110, 111	Misra D.S.	288
Maegawa M.	224, 294	Mitura A.	365
Maevsky V.M.	231	Mitura S.	365
Maillard-Schaller E.	285, 364	Miyashita A.	515, 526
Makarskaya G.V.	454	Miyashita K.	323
Makeev A.V.	452	Mizuno S.	
Makita H.	398, 399		501
Maksimova N.I.	522	Mochizuki K.	601
		Mohapatra R.K.	582
Mal'kov I.Y.	058, 059, 079, 080, 088,	Moldovan N.	353, 478
	133, 189, 558, 618	Molokeev V.A.	051
Mal'kov Y.F.	069	Mordkovich V.Z.	514
Mal'kov Yu.I.	078, 083, 087	Morell G.	322, 329
Malogolovets V.G.	254, 255	Mori Y.	224, 294, 370
Malyshev A.N.	104	Morohov I.D.	038
Mamezaki O.	537	Morooka S.	264, 265
Mancini D.C.	353, 478	Moroz E.M.	079, 174
Mandich N.V.	282	Mozdor E.V.	231
Mao H.K.	132	Mueller G.	406
Marinich M.A.	089, 246, 249, 255, 467,	Müller G.	235
	470	Mutschke H.	595
Marken F.	319, 320	Myers A.F.	378
Markov L.	642	Nachal'naya T.A.	019
Marks N.A.	138	Nadeeva F.I.	611
Martin R.M.	134, 207, 208	Nagai N.	295
Martinez-Miranda L.J.		Nakano H.	573
Martini O.	508	Naletov A.M.	409
Martonik M.V.	616, 621	Naletov M.	419
Marty O.	124	Naramoto H.	323, 393
Maruyama S.	490	Narayan J.	378
Maslákov K.I.	228, 230, 247	Narumi K.	323
Mason T.O.	506	Nau D.	406
Mastikhin V.M.	307	Nesladek M.	313
Masuda H.	567	Nesterenko T.M.	414
Matsuki M.	295	Neuefeind J.	176
Matsumoto S.	229, 349	Nevstruev G.F.	166
Mazanov V.A.	061, 075, 315	Ni Y.	232, 485, 531
McCallum J.C.	092, 093, 149	Niedzielski P.	365
McCauley T.G.	368, 372, 374, 375, 377,	Nikitin E.V.	615
medialey r.c.	379, 380, 445	Nikitin Yu.I.	414, 435, 437
McCulloch D.G.	297	Nikolaev Yu.A.	220
McNallan M.J.	123, 125, 126, 127	Nishimura K.	336, 398
McNamara Rutledge K.M		Nishio K.	
Meaudre R.	124	Nomura S.	567 210
Medvedkin V.A.	436	Nomura Y.	
			012
Meguro T.	110, 111	Novikov N.V.	249
Melekhin V.G.	211	Novikov S.A.	104, 436
Mel'nikov V.A.	010	Novosyolov V.V.	261
Meng F.Y.	091	Nozhkina A.V.	252
Meng X.M.	334	Nugent K.W.	093, 214, 290
Mescheryakova A.L.	406	Nuth J.A.	001
Messmer R.P.	384	Nuth J.A. III.	006, 602
Mestl G.	522	Obata H.	224
Metev S.M.	386	Obraztsov A.M.	168
Meyer E.M.	353, 478	Obraztsov A.N	304, 241, 389, 392

Obrazisova E.D.				Autioi ilidex
Odintsov V.V. 667, 082 Philip J. 318 Pogorodnik V.V. 634 Philips D.S. 071 Philips D.S. 072 Philips D.S. 073 Philips D.S. 074	Obraztsova E.D.	222, 386, 547, 548	Petrusha I.A.	
Oggordnik V.V.         634 (Ohno H.         Philipo S.S.         071 (Ohno H.           Ohada K.         169, 229, 349, 439, 432 (Pincher T.         Pincher T.         306 (Pincher T.           Okada K.         169, 229, 349, 439, 432 (Pincher T.         Pincher T.         525 (Pincher T.           Okin F.         486 (Pincher T.         Pincher T.         525 (Pincher T.           Oku T.         531 (Pincher T.         577, 584, 591, 596 (Pincher T.           Oku T.         324 (Pincher T.         577, 584, 591, 596 (Pincher T.           Okushi X.         304 (Okushi X.         401 (Pincher T.         405, 471, 548 (Pincher T.           Oleinik N.A.         409, 190 (Pieskach L.I.         622 (Pieskach L.I.         622 (Pieskach L.I.           Orwa J.O.         692, 11, 219, 248, 271, 313 (Pieskach L.I.         628 (Pieskach L.I.         628 (Pieskach L.I.           Osawa E.         248 (Pieskach L.I.         625 (Pieskach L.I.         625 (Pieskach L.I.           Osipov V.Yu.         211, 219, 248, 271, 313 (Pieskach L.I.         Pontier Johnson M.         672 (Pieskach L.I.           Osipov V.Yu.         211, 219, 248, 271, 313 (Pieskach L.I.         Pontier Johnson M.         672 (Pieskach L.I.           Osipov V.Yu.         211, 229, 248, 271, 313 (Pieskach L.I.         Pontier Johnson M.         672 (Pieskach L.I.				116, 120, 122
Ohn H.         573         Phillpot S.R.         256           Okada K.         169, 229, 349, 439, 432         Pinnetta P.A.         306           Okino F.         486         Pinnetta P.A.         306           Okotrub A.V.         232, 233, 302, 485, 523,         Pichler T.         525           Oku T.         524         Pimenov S.M.         177, 222, 339, 386, 400,           Oleinik G.S.         418, 420, 425         Pilmerov S.M.         177, 222, 339, 386, 400,           Oleinik N.A.         089, 190         Piseri P.         237           Orlova E.A.         401         Poltoratsikij V.G.         435, 437, 414           Orsava E.         248         Pontier Johnson M.         072, 103           Osipov V.yu.         211, 219, 248, 271, 313         Postnov V.N.         074, 424           Ostrovskaya N.F.         186         60t         186           Ott U.         582, 583, 595, 599         Postnov V.N.         074, 424           Overmyer D.L.         363         623, 623, 623, 624         Prawer S.         902, 093, 149, 188, 199,           Owby P.D.         441         Presa A.         419         Presa A.         419           Pageler A.         404         Primachewa L.G.         621         <	Odintsov V.V.	067, 082	Philip J.	318
Ohta H.         529         Pianetta P.A.         306           Okada K.         169, 229, 349, 439, 432         Pichler T.         525           Okotrub A.V.         232, 233, 302, 485, 523, 531         Pichler T.         525           Oku T.         524         Pillinger C.T.         577, 584, 591, 596           Oleniik G.S.         418, 420, 425         Piseri P.         327           Oleniik N.A.         689, 190         Pieskach L.I.         628           Orlova E.A.         401         Pong W.F.         242, 356           Osawa E.         248         Poltoratsikij V.G.         435, 437, 414           Osipov V.Yu.         211, 219, 248, 271, 313         Posttnov V.N.         072, 103           Ostrovidova G.U.         552, 583, 595, 599         Ponusing O.         625           Ouyang O.         G. 176, 623, 623, 623, 623, 624         Prowernyer D.         625           Ownby P.D.         441         Primacheva L.G.         625           Ownby P.D.         441         Primacheva L.G.         621           Pal A.F.         143         Prior Y.         396           Palosz B.         176, 409         Primacheva L.G.         621           Parpai J.M.         191         Provencio P.P.				
Okada K.         169, 229, 349, 439, 432         Pickarczyk W.         525           Okotrub A.V.         232, 233, 302, 485, 523, 523         Pickarczyk W.         160           Oku T.         524         Pilesarzyk W.         160           Oku T.         524         Pilesarzyk W.         176           Oku Shi X.         304         Pilesarzyk W.         160           Olenik G.S.         418, 420, 425         Pilesarzyk W.         177, 222, 339, 386, 400, 405, 471, 548           Olenik G.S.         418, 420, 425         Piseri P.         327           Olenik N.A.         089, 190         Poleskach L.I.         628           Orwal J.O.         092, 093, 149, 214         Poloratsikij V.G.         435, 437, 414           Osawa E.         248         Politoratsikij V.G.         435, 437, 414           Osipov V.Yu.         211, 219, 248, 271, 313         Postorov V.N.         074, 424           Ostrovskaya N.F.         186         Ort.U.         582, 583, 595, 599         Postorov V.N.         074, 424           Owrhy P.D.         441         Prace S.         292, 623, 623, 623, 624         Prawer S.         092, 2093, 149, 188, 199, 214           Ownby P.D.         441         Prace S.         Prace S.         Prace S.         499, 504<				
Okino F.         486 (Notrub A.V.         232, 233, 302, 485, 523, 523, 523, 302, 302, 485, 523, 523, 302, 302, 302, 302, 302, 302, 302, 3				
Okotrub A.V.   232, 233, 302, 485, 523,   Pielaszek R.   176				
Oku T         524         Pillinger C.T.         577, 884, 591, 596           Okushi X.         304         Himonov S.M.         177, 222, 339, 386, 400,           Oleniik G.S.         418, 420, 425         Piseri P.         327           Orlova E.A.         401         Poltoratsikij V.G.         435, 437, 414           Orwa J.O.         992, 093, 149, 214         Pong W.F.         242, 356           Osawa E.         248         Pontier Johnson M.         072, 103           Ostrovidova G.U.         452         Popovici G.         433           Ostrovidova G.U.         452         Postinov V.N.         074, 424           Ovcharenko A.G.         617, 623, 623, 623, 624         Presad B.L.V.         201, 283, 488, 489, 494, 494, 494, 494           Ovcharenko A.G.         617, 623, 623, 623, 624         Presad B.L.V.         201, 283, 488, 489, 494, 494, 499, 504           Ozima M.         601         Presad B.L.V.         201, 283, 488, 489, 494, 494, 494, 494, 494, 494				
Oku T.         524         Pimenov S.M.         177, 222, 339, 386, 400, 405, 471, 548           Oleinik G.S.         418, 420, 425         Piseri P.         327           Oleinik N.A.         089, 190         Piseri P.         327           Orrova E.A.         401         92, 093, 149, 214         Ponome S.M.         405, 471, 548           Orway I.O.         092, 093, 149, 214         Ponome W.F.         242, 356           Oshida K.         201         Ponome W.F.         242, 356           Ostrovskaya N.F.         186         Pottor J.         432           Ott U.         582, 583, 595, 599         Potapov M.G.         625           Overmyer D.L.         363         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 499, 504           Orwhy P.D.         441         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 499, 504           Orwermyer D.L.         363         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 493           Orwermyer D.L.         441         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 493           Orwermyer D.L.         443         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 493           Prasad B.L.V.         201, 283, 488, 489, 494, 494, 493         Prasad B.L.V.         201, 283, 488, 489, 494, 494, 494, 494, 494, 494	Okotrub A.V.			
Okushi X.         304 (Oleinik G.S.)         418, 420, 425 (Oleinik G.S.)         401 (Orea J.O.)         Piseri P. (Ole J.S.)         327 (Oleinik G.S.)         401 (Orea J.O.)         Piseri P. (Ole J.S.)         327 (Ole J.S.)         433 (Ole J.S.)         442 (Ole J.S.)         433 (Ole J.S.)         444 (Ole J.S.) <t< td=""><td>O1 m</td><td></td><td></td><td></td></t<>	O1 m			
Oleinik G.S.   418, 420, 425   Piseri P.   327   Annual Color P.			Pimenov S.M.	
Oleinik N.A.   Oley			D' 'D	
Orlova E.A.         401 (Orwa J.O.)         O92, 093, 149, 214 (Pong W.F.)         242, 356 (Arg.)         243, 437, 414 (Pong W.F.)         242, 256 (Pong W.F.)         249, 250 (Pong W.F.)         241, 250 (Pong W.F.)         247, 250 (Pong W.F.)         247, 250 (Pon				
Orwal J.O.         092, 093, 149, 214         Pong W.F.         242, 356           Osawa E.         248         Pontier Johnson M.         272, 103           Oshida K.         201         Popovici G.         433           Ostrovidova G.U.         452         Postnov V.N.         074, 424           Ostrovskaya N.F.         186         Ott U.         582, 583, 595, 599           Ouyang Q.         169, 432, 439         Prasad B.L.V.         201, 283, 488, 489, 494, 499, 504           Overhyer D.L.         363         Prawer S.         992, 093, 149, 188, 199, 504           Ovenyer D.L.         441         214, 290           Ozawa M.         248         Prelas M.A.         433           Ozima M.         601         Presz A.         419           Pageler A.         404         Primacheva L.G.         621           Palosz B.         176, 409         Proffen T.         176           Palosz W.         176         Provencio P.N.         363           Parinach A.M.         248         Purtov K.V.         456, 457           Parina J.M.         191         Purtov K.V.         456, 457           Parinach A.M.         248         Purtov K.V.         456, 457, 458, 460,				
Osawa E. Oshida K. Oshida K. Oshida K. Oshida K. Oshov V.Yu. Ostrovidova G.U. Ostrovidova G.U. Ostrovidova N.U. Distrovidova N.U. Ostrovidova N.U. Ostrovidova N.U. Ostrovidova N.U. Ostrovidova N.U. Ostrovidova N.D. Ostrov				
Oshida K.         201         Popovici G.         433           Osipov V.Yu.         211, 219, 248, 271, 313         Postnov V.N.         074, 424           Ostrovidova G.U.         452         Postnov V.N.         625           Ott U.         582, 583, 595, 599         Ouyang Q.         169, 432, 439         Prasad B.L.V.         201, 283, 488, 489, 494, 499, 504           Oventyer D.L.         363         Prawer S.         092, 093, 149, 188, 199, 214, 290           Ozawa M.         248         Prelas M.A.         433           Ozima M         601         Presz A.         419           Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Palosz B.         176, 409         Prihod'ko E.E.         621           Palosz S.         419         Provencio P.N.         363           Par S.         176         Provencio P.N.         363           Palosz W.         176         Provencio P.N.         363           Par S.         385, 387, 388         Purtov K.V.         456, 457           Paris J.M.         191         Putsis A.         391           Parjia J.M.         191         Putsis A.         391           Parjia J.M.         191         Putsis A. <td></td> <td></td> <td></td> <td></td>				
Osipov V.Yu.         211, 219, 248, 271, 313         Postnov V.N.         074, 424           Ostrovidova G.U.         452         Potapov M.G.         625           Ostrovskaya N.F.         186         Vermyer D.S.         582, 583, 595, 599           Ouyang Q.         619, 432, 439         Prasad B.L.V.         201, 283, 488, 489, 494, 499, 504           Overmyer D.L.         363         Prawer S.         092, 093, 149, 188, 199, 504           Ownby P.D.         441         Prawer S.         092, 093, 149, 188, 199, 504           Ozawa M.         248         Prelas M.A.         433           Ozima M         601         Presz A.         419           Padlako V.I.         231, 249, 473         Prihod'ko E.E.         630           Pageler A.         404         Primacheva L.G.         621           Palosz B.         176, 409         Proffen T.         176           Palosz B.         176         Provencio P.P.         198           Panich A.M.         248         Putrov K.V.         456, 457           Panich A.M.         248         Putrov K.V.         456, 457           Pary S.         234         Putrov K.V.         456, 457, 458, 460,           Parrinello M.         134, 207, 208, 260, 510				
Ostrovidova G.U. Ostrovskaya N.F.         452 (17 Costrovskaya N.F.)         Potapov M.G.         625           Ostrovskaya N.F.         186 (17 Cost.)         7 Prasad B.L.V.         201, 283, 488, 489, 494, 494, 499, 504           Owcharenko A.G.         617, 623, 623, 623, 624         499, 504           Owermyer D.L.         363 (24 Cost.)         441 (290)           Ozawa M.         248 (24 Cost.)         441 (290)           Ozima M.         601 (24 Cost.)         441 (290)           Ozima M.         601 (24 Cost.)         441 (290)           Padalko V.I.         231, 249, 473 (24 Cost.)         419 (24 Cost.)           Padalko V.I.         231, 249, 473 (24 Cost.)         419 (24 Cost.)           Palosz B.         176, 409 (24 Cost.)         400 (24 Cost.)           Palosz B.         176 (24 Cost.)         470 (27 Cost.)           Palosz W.         176 (24 Cost.)         470 (27 Cost.)           Pank S.         234 (24 Cost.)         470 (27 Cost.)           Partiol J.M.         191 (27 Cost.)         471 (27 Cost.)           Partiol A.M.         248 (24 Cost.)         472 (24 Cost.)           Partiol A.M.         191 (24 Cost.)         472 (25 Cost.)           Partiol M.         191 (24 Cost.)         472 (25 Cost.)           Parti				
Ostrovskaya N.F. Oit U.         186 Ovariance of the control of				
Ott U.         582, 583, 595, 599         Prasad B.L.V.         201, 283, 488, 489, 494, 499, 504           Ovcharenko A.G.         617, 623, 623, 623, 623         499, 504           Overmyer D.L.         363         97 rawer S.         092, 093, 149, 188, 199, 214, 290           Ownby P.D.         441         214, 290         214, 290           Ozawa M.         248         Prelas M.A.         433           Ozima M         601         Presz A.         419           Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Pageler A.         404         Prior Y.         396           Palosz B.         176, 409         Proffen T.         176           Palosz W.         176         Provencio P.N.         363           Panich A.M.         248         Purtov K.V.         456, 457           Panich A.M.         248         Purtov K.V.         456, 457           Parinello M.         134, 207, 208, 260, 510         Pustovio V.         471           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Pavlovsky I.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376,           Pecz B.         095         Qiu D.J.         326     <			i otapov ivi.o.	023
Ouyang Q.         169, 432, 439         Prasad B.L.V.         201, 283, 488, 489, 494, 499, 504           Overnyer D.L.         363         Prawer S.         092, 093, 149, 188, 199, 214, 290           Ozawa M.         248         Prelas M.A.         433           Ozima M.         601         Presz A.         419           Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Pageler A.         404         Primacheva L.G.         621           Palosz B.         176, 409         Proffen T.         176           Palosz S.         419         Provencio P.N.         363           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Park S.         234         Putrov K.V.         456, 457           Parlial J.M.         191         Pustovoi V.         471           Parlial B.A.         473         Pustovoi V.         471           Parlial B.A.         473         Pustovoi V.         454, 456, 457, 458, 460,           Parlial B.A.         473         Pustovoi V.         454, 456, 457, 458, 460, <td></td> <td></td> <td></td> <td></td>				
Ovcharenko A.G.         617, 623, 623, 623, 624         499, 504           Overmyer D.L.         363         Prawer S.         092, 093, 149, 188, 199, 214, 290           Ownby P.D.         441         214, 290         203, 149, 188, 199, 214, 290           Ozawa M.         248         Prelas M.A.         433           Ozima M         601         Presz A.         419           Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Pageler A.         404         Primacheva L.G.         621           Pal A.F.         143         Prior Y.         396           Palosz B.         176, 409         Proffen T.         176           Palosz W.         176         Provencio P.P.         198           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Parinello M.         134, 207, 208, 260, 510         Prusyr' A.P.         454, 456, 457, 458, 460,           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Pavlovskaya M.A.         104         Qian YZ.         587 </td <td></td> <td></td> <td>Prasad B.L.V.</td> <td>201, 283, 488, 489, 494,</td>			Prasad B.L.V.	201, 283, 488, 489, 494,
Overmyer D.L. Ownby P.D. Ownby P.D. Ownby P.D. A41  Ozawa M.  248  Ozima M.				
Oxmby P.D.			Prawer S.	
Ozima M         601         Presz A.         419           Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Pageler A.         404         Primacheva L.G.         621           Pal A.F.         143         Prior Y.         396           Palosz B.         176, 409         Proffen T.         176           Palosz W.         176         Provencio P.N.         363           Palosz W.         176         Provencio P.P.         198           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Pan K.         234         Putrov K.V.         456, 457           Parinello M.         191         Putrov K.V.         456, 457, 458, 460,           Parrinello M.         134, 207, 208, 260, 510         Putrov V.F.         454, 456, 457, 458, 460,           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaternev S.V.         086           Pavlovskay J.A.         205         Pote Pote S.V.         086           Pecz B.         095         Qin L.C.         368, 372, 373, 374, 376,           Perg CM.         026, 076         Rainey L.C.         534		441		
Padalko V.I.         231, 249, 473         Prihod'ko E.E.         630           Pagleler A.         404         Primacheva L.G.         621           Pal A.F.         143         Prior Y.         396           Palosz B.         176, 409         Proffen T.         176           Palosz W.         176         Provencio P.N.         363           Palosz W.         176         Provencio P.P.         198           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Paris J.M.         191         Puzyr' A.P.         454, 456, 457, 458, 460,           Parinello M.         134, 207, 208, 260, 510         Pyaterikov V.F.         632, 633, 636           Patel B.A.         473         Pyaterikov V.F.         632, 633, 636           Patel B.A.         473         Pyaterikov V.F.         632, 633, 636           Patel B.A.         104         Qian YZ.         587           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Patel B.A.         205         Qian YZ.         587           Pavlovskaya H.A.         205         Qib D.J.         368, 372, 373, 374, 376, <td>Ozawa M.</td> <td>248</td> <td>Prelas M.A.</td> <td></td>	Ozawa M.	248	Prelas M.A.	
Pageler A.         404         Primacheva L.G.         621           Pal A.F.         143         Prior Y.         396           Palosz B.         176, 409         Proffen T.         176           Palosz S.         419         Provencio P.N.         363           Palosz W.         176         Provencio P.P.         198           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Park S.         234         Puttov K.V.         456, 457, 458, 460,           Parpia J.M.         191         Puzyr' A.P.         454, 456, 457, 458, 460,           Parrinello M.         134, 207, 208, 260, 510         461, 462, 463, 464         461, 462, 463, 464           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636         69           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636         60           Pavisova Y.A.         205         Pyaterikov V.F.         632, 633, 636         60           Pecz B.         095         Qin L.C.         368, 372, 373, 374, 376,         380           Pecz B.         095         Qin L.C.         368, 372, 373, 374, 376,         380				
Paï A.F.       143       Prior Y.       396         Palosz B.       176, 409       Proffen T.       176         Palosz W.       176       Provencio P.N.       363         Palosz W.       176       Provencio P.P.       198         Pan X.       385, 387, 388       Purtov K.V.       456, 457         Panich A.M.       248       Pustovoi V.       471         Park S.       234       Puttis A.       391         Parpia J.M.       191       Puzyr' A.P.       454, 456, 457, 458, 460, 461, 462, 463, 464         Partinello M.       134, 207, 208, 260, 510       Pyaterikov V.F.       632, 633, 636         Patrusheva T.       472       Pyaterikov V.F.       632, 633, 636         Patrusheva T.       472       Pyaterikov V.F.       086         Pavlovsky I.Yu.       241, 304       Qin L.C.       368, 372, 373, 374, 376, 380         Pecz B.       095       Qiu D.J.       326         Pedraza D.F.       509       Rahel' A.D.       064         Peng C.M.       493       Raj R.       194         Peng C.W.       493       Raj R.       194         Peng H.Y.       355       Raj R.       194         Peng MP. <t< td=""><td></td><td></td><td></td><td></td></t<>				
Palosz B. 176, 409 Proffen T. 176 Palosz S. 419 Provencio P.N. 363 Palosz W. 176 Provencio P.P. 198 Pan X. 385, 387, 388 Purtov K.V. 456, 457 Panich A.M. 248 Puttov K.V. 456, 457 Parich A.M. 191 Putnis A. 391 Parpia J.M. 191 Puzyr' A.P. 454, 456, 457, 458, 460, 461, 462, 463, 464 Patel B.A. 473 Pyaterikov V.F. 632, 633, 636 Patrusheva T. 472 Pyaternev S.V. 086 Pavlovskaya M.A. 104 Qina YZ. 587 Pavlovskay I.Yu. 241, 304 Qin L.C. 368, 372, 373, 374, 376, 380 Pecz B. 095 Qiu D.J. 326 Pedraza D.F. 509 Rahel' A.D. 064 Peng CM. 026, 076 Rainey L.C. 534 Peng H.Y. 355 Rajguru S. 466 Peng H.Y. 355 Rajguru S. 466 Peng WP. 296 Rakhimov A. 339 Peng WP. 296 Rakhimov T. 354, 358 Pereverzev V.G. 222 Ramsh A.S. 429 Perron C. 592 Ransh A.S. 429 Perron C. 592 Rao A.M. 201, 489 Petrakovskaya E.A. 236, 417 Petrov E.A. 027, 070, 013, 045, 046, Ray JY. 139 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629				
Palosz S. 419 Provencio P.N. 363 Palosz W. 176 Provencio P.P. 198 Pan X. 385, 387, 388 Purtov K.V. 456, 457 Panich A.M. 248 Purtov K.V. 471 Park S. 234 Putnis A. 391 Parpia J.M. 191 Puzyr' A.P. 454, 456, 457, 458, 460, 461, 462, 463, 464 Patel B.A. 473 Pyaterikov V.F. 632, 633, 636 Patrusheva T. 472 Pyaternev S.V. 086 Pavlovskaya M.A. 104 Qian YZ. 587 Pavlovsky I.Yu. 241, 304 Qin L.C. 368, 372, 373, 374, 376, 205 Pecz B. 095 Qiu D.J. 326 Pedraza D.F. 509 Rahel' A.D. 064 Peng CM. 026, 076 Rainey L.C. 534 Peng H.Y. 355 Rajgru S. 466 Peng H.Y. 355 Rajgru S. Peng H.Y. 297 Rakhimov A. 339 Peng WP. 296 Rakhimov T. 354, 358 Peng WP. 296 Rakhimov T. 354, 358 Pereverzev V.G. 222 Ramsh A.S. 429 Perron C. 592 Rao A.M. 201, 489 Pershin S.V. 056, 062, 077, 086 Rao C.N.R. 243, 244 Petrakovskaya E.A. 236, 417 Petrov E.A. 027, 070, 013, 045, 046, 026, 625 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629				
Palosz W.         176         Provencio P.P.         198           Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Park S.         234         Putnis A.         391           Parpia J.M.         191         Puzyr' A.P.         454, 456, 457, 458, 460, 461, 462, 463, 464           Parrinello M.         134, 207, 208, 260, 510         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Pavlovskaya M.A.         104         Qian YZ.         587           Pavlovskaya J.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376, 376, 380           Pecz B.         095         Qiu D.J.         326           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Raijguru S.         466           Peng H.Y.         355         Raj R.         194           Peng H.Y.         355         Rakhimov A.         339				
Pan X.         385, 387, 388         Purtov K.V.         456, 457           Panich A.M.         248         Pustovoi V.         471           Park S.         234         Putnis A.         391           Parpia J.M.         191         Puzyr' A.P.         454, 456, 457, 458, 460,           Parrinello M.         134, 207, 208, 260, 510         461, 462, 463, 464           Patel B.A.         473         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaterikov V.F.         632, 633, 636           Pyaterikov V.F.         932         836         372, 373, 374, 376,           Bartusheva T.         295         Rahel N.D.         064           Perg B.         995         Qiu D.J.         326           Peng C.M.         926, 076         Rainey L.C.         534				
Panich A.M.       248       Pustovoi V.       471         Park S.       234       Putnis A.       391         Parpia J.M.       191       Puzyr' A.P.       454, 456, 457, 458, 460, 461, 462, 463, 464         Parlinello M.       134, 207, 208, 260, 510       461, 462, 463, 464         Patel B.A.       473       Pyaterikov V.F.       632, 633, 636         Patrusheva T.       472       Pyaterikov V.F.       632, 633, 636         Pavlovsky I.Yu.       241, 304       Qian YZ.       587         Pavlovsky I.Yu.       241, 304       Qin L.C.       368, 372, 373, 374, 376,         Pev B.       095       Qiu D.J.       326         Pedraza D.F.       509       Rahel' A.D.       064         Peng C.M.       026, 076       Rainey L.C.       534         Peng C.W.       493       Raj R.       194         Peng H.Y.       355       Rajguru S.       466         Peng J.L.       093, 149, 188, 214, 250,       Rakhimov A.       339         Peng WP.       296       Ralchenko V.G.       369, 386, 400, 421, 422,         Pepekin V.I.       067, 082       475         Perron C.       592       Rao A.M.       201, 489         Perron S.V. </td <td></td> <td></td> <td></td> <td></td>				
Park S.         234         Putnis A.         391           Parpia J.M.         191         Puzyr' A.P.         454, 456, 457, 458, 460,           Parrinello M.         134, 207, 208, 260, 510         Holder J. A.P.         454, 456, 457, 458, 460,           Patrusheva T.         473         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaternev S.V.         086           Pavlovsky I.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376,           Pavlovsky Y.A.         205         380           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Rainey L.C.         534           Peng G.W.         493         Raj R.         194           Peng H.Y.         355         Rajguru S.         466           Peng J.L.         093, 149, 188, 214, 250,         Rakhimov A.         339           Peng WP.         296         Rakhimov T.         354, 358           Peng WP.         296         Rachenko V.G.         369, 386, 400, 421, 422,           Perron C.         592         Rao A.M.         201, 489           Per		202, 207, 200 249		
Parpia J.M. 191 Puzyr' A.P. 454, 456, 457, 458, 460, Parrinello M. 134, 207, 208, 260, 510 Pyaterikov V.F. 632, 633, 636 Patrusheva T. 472 Pyaternev S.V. 086 Pavlovskaya M.A. 104 Qian YZ. 587 Pavlovsky I. Yu. 241, 304 Qin L.C. 368, 372, 373, 374, 376, Pecz B. 095 Qiu D.J. 326 Pedraza D.F. 509 Rahel' A.D. 064 Peng CM. 026, 076 Rainey L.C. 534 Peng H.Y. 355 Rajguru S. 466 Peng J.L. 093, 149, 188, 214, 250, Rakhimov A. 339 Peng WP. 296 Rahelword T. Rakhimov T. 354, 358 Pereverzev V.G. 222 Ramsh A.S. 429 Pershin S.V. 056, 062, 077, 086 Rao C.N.R. 243, 244 Petrakovskaya E.A. 027, 070, 013, 045, 046, Petrakov S.W. 128 Petrov E.A. 026 Petrov Y.I. 037 Petrov Y.I. 037 Pedrakov V.E. 616, 621, 622, 629				
Partinello M. 134, 207, 208, 260, 510				
Patel B.A.         473         Pyaterikov V.F.         632, 633, 636           Patrusheva T.         472         Pyaternev S.V.         086           Pavlovskaya M.A.         104         Qian YZ.         587           Pavlovsky I.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376,           Pavtsova Y.A.         205         380           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Rainey L.C.         534           Peng C.W.         493         Raj R.         194           Peng H.Y.         355         Rajguru S.         466           Peng J.L.         093, 149, 188, 214, 250, Rakhimov A.         339           Peng WP.         296         Rakhimov T.         354, 358           Pepekin V.I.         067, 082         475           Perron C.         592         Ramsh A.S.         429           Perron S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrakovskaya E.A.         027, 070, 013, 045, 046, O46, O45, 046, O46, O46, O46, O46, O46,			ruzyi it.i.	
Patrusheva T.			Pvaterikov V.F.	
Pavlovskaya M.A.         104         Qian YZ.         587           Pavlovsky I.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376,           Pavtsova Y.A.         205         380           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Rainey L.C.         534           Peng C.W.         493         Raj R.         194           Peng H.Y.         355         Raj guru S.         466           Peng J.L.         093, 149, 188, 214, 250, 207         Rakhimov A.         339           297         Rakhimov T.         354, 358           Peng WP.         296         Ralchenko V.G.         369, 386, 400, 421, 422, 475           Perekin V.I.         067, 082         475           Perron C.         592         Rao A.M.         201, 489           Pershin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrakovskaya E.A.         027, 070, 013, 045, 046, 047, 048, 048, 048, 048, 048, 049, 049, 049, 049, 049, 049, 049, 049				
Pavlovsky I.Yu.         241, 304         Qin L.C.         368, 372, 373, 374, 376, 380           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Rainey L.C.         534           Peng C.W.         493         Raj R.         194           Peng H.Y.         355         Rajguru S.         466           Peng J.L.         093, 149, 188, 214, 250, 297         Rakhimov A.         339           Peng WP.         296         Ralchenko V.G.         369, 386, 400, 421, 422, 475           Pereverzev V.G.         222         Ramsh A.S.         429           Perrson C.         592         Rao A.M.         201, 489           Pershin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrov E.A.         027, 070, 013, 045, 046, 814, 824         Rady JY.         139           054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 824         Reddern P.C.         163, 367, 373           Petrov Y.I.         037         Redfern P.C.         163, 367, 373           Retrov Y.I.         037         Redfern P.C. </td <td></td> <td>104</td> <td></td> <td></td>		104		
Pavtsova Y.A.         205         380           Pecz B.         095         Qiu D.J.         326           Pedraza D.F.         509         Rahel' A.D.         064           Peng C.M.         026, 076         Rainey L.C.         534           Peng C.W.         493         Raj R.         194           Peng H.Y.         355         Rajguru S.         466           Peng J.L.         093, 149, 188, 214, 250, 297         Rakhimov A.         339           Peng WP.         296         Rakhimov T.         354, 358           Pepekin V.I.         067, 082         475           Perron C.         292         Ramsh A.S.         429           Perron C.         592         Rao A.M.         201, 489           Perrshin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrov E.A.         027, 070, 013, 045, 046, 814, 824         Raty JY.         139           054, 056, 066, 066, 171, 173, 209, 450, 451, 608, 614, 824         Reddern P.C.         163, 367, 373           Petrov Y.I.         037         Redfern P.C.         163, 367, 373           Retrov Y.I.         037         R		241, 304	Qin L.C.	368, 372, 373, 374, 376,
Pedraza D.F.         509         Rahel' A.D.         064           Peng CM.         026, 076         Rainey L.C.         534           Peng C.W.         493         Raj R.         194           Peng H.Y.         355         Rajguru S.         466           Peng J.L.         093, 149, 188, 214, 250, Rakhimov A.         339           297         Rakhimov T.         354, 358           Peng WP.         296         Ralchenko V.G.         369, 386, 400, 421, 422, 475           Pepekin V.I.         067, 082         475           Perron C.         592         Rao A.M.         201, 489           Pershin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrov E.A.         027, 070, 013, 045, 046, Raty JY.         139           054, 056, 066, 171, 173, 209, 450, 451, 608, 614, Reddy G.L.N.         288           620, 625         Redfern P.C.         163, 367, 373           Petrov Y.I.         037         Red'kin V.E.         616, 621, 622, 629		205	-	380
Peng CM.       026, 076       Rainey L.C.       534         Peng C.W.       493       Raj R.       194         Peng H.Y.       355       Rajguru S.       466         Peng J.L.       093, 149, 188, 214, 250, 297       Rakhimov A.       339         Peng WP.       296       Ralchenko V.G.       369, 386, 400, 421, 422, 475         Pepekin V.I.       067, 082       475         Perron C.       592       Ramsh A.S.       429         Pershin S.V.       056, 062, 077, 086       Rao C.N.R.       243, 244         Petrakovskaya E.A.       236, 417       Rao T.N.       567         Petrov E.A.       027, 070, 013, 045, 046, 814, Rao T.N.       567         Petrov Y.I.       034, 056, 066, 171, 173, Ravindran T.R.       288         620, 625       Redfern P.C.       163, 367, 373         Petrov Y.I.       037       Redfern P.C.       163, 367, 373				
Peng C.W.       493       Raj R.       194         Peng H.Y.       355       Rajguru S.       466         Peng J.L.       093, 149, 188, 214, 250, 297       Rakhimov A.       339         Peng WP.       296       Rakhimov T.       354, 358         Pepekin V.I.       067, 082       475         Perror C.       222       Ramsh A.S.       429         Perrshin S.V.       056, 062, 077, 086       Rao C.N.R.       243, 244         Petrakovskaya E.A.       236, 417       Rao T.N.       567         Petrov E.A.       027, 070, 013, 045, 046, 046, 044, 054, 054, 056, 066, 171, 173, 054, 056, 066, 171, 173, 054, 056, 056, 056, 056, 056, 056, 056, 056				
Peng H.Y.       355       Rajguru S.       466         Peng J.L.       093, 149, 188, 214, 250, 297       Rakhimov A.       339         Peng WP.       296       Rakhimov T.       354, 358         Pepekin V.I.       067, 082       475         Pereverzev V.G.       222       Ramsh A.S.       429         Perron C.       592       Rao A.M.       201, 489         Petrakovskaya E.A.       236, 417       Rao C.N.R.       243, 244         Petrov E.A.       027, 070, 013, 045, 046, 054, 046, 054, 056, 066, 171, 173, 054, 054, 056, 066, 171, 173, 054, 054, 056, 066, 171, 173, 054, 054, 054, 054, 054, 054, 054, 054				
Peng J.L.       093, 149, 188, 214, 250, 297       Rakhimov A. Rakhimov A. Rakhimov T. Rakhimov T. 354, 358       339         Peng WP.       296       Ralchenko V.G. 369, 386, 400, 421, 422, 475         Pepekin V.I.       067, 082       475         Perron C.       592       Ramsh A.S. 429         Pershin S.V.       056, 062, 077, 086       Rao C.N.R. 243, 244         Petrakovskaya E.A.       236, 417       Rao T.N. 567         Petrov E.A.       027, 070, 013, 045, 046, 054, 046, 054, 056, 066, 171, 173, 054, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 054, 046, 056, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 056, 066, 066, 171, 173, 066, 066, 066, 171, 173, 066, 066, 066, 066, 066, 066, 066, 06				
Peng WP. 296 Rakhimov T. 354, 358 Peng WP. 296 Ralchenko V.G. 369, 386, 400, 421, 422, 475 Perpekin V.I. 067, 082 475 Perron C. 592 Ramsh A.S. 201, 489 Pershin S.V. 056, 062, 077, 086 Rao C.N.R. 243, 244 Petrakovskaya E.A. 236, 417 Rao T.N. 567 Petrov E.A. 027, 070, 013, 045, 046, 027, 070,				
Peng WP.       296       Ralchenko V.G.       369, 386, 400, 421, 422, 475         Perekin V.I.       067, 082       475         Pereverzev V.G.       222       Ramsh A.S.       429         Pershin S.V.       056, 062, 077, 086       Rao C.N.R.       243, 244         Petrakovskaya E.A.       236, 417       Rao T.N.       567         Petrov E.A.       027, 070, 013, 045, 046, 044, 044       Raty JY.       139         054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625       Reddy G.L.N.       288         Petrov Y.I.       037       Red'kin V.E.       616, 621, 622, 629	Peng J.L.			
Pepekin V.I.         067, 082         475           Pereverzev V.G.         222         Ramsh A.S.         429           Perron C.         592         Rao A.M.         201, 489           Pershin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrov E.A.         027, 070, 013, 045, 046, 054, 054, 054, 054, 054, 054, 054, 054	n 111 n			
Pereverzev V.G.         222         Ramsh A.S.         429           Perron C.         592         Rao A.M.         201, 489           Pershin S.V.         056, 062, 077, 086         Rao C.N.R.         243, 244           Petrakovskaya E.A.         236, 417         Rao T.N.         567           Petrov E.A.         027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 054, 056, 066, 171, 173, 056, 056, 056, 056, 056, 056, 056, 056			Raichenko V.G.	
Perron C. 592 Rao A.M. 201, 489 Pershin S.V. 056, 062, 077, 086 Rao C.N.R. 243, 244 Petrakovskaya E.A. 027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629			Downsk A.C.	
Pershin S.V. Petrakovskaya E.A. Petrov E.A.  056, 062, 077, 086 236, 417 027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625 Petrov Y.I.  056, 062, 077, 086 Rao C.N.R. Rao T.N. Ravindran T.R. Ravindran T.R. Ravindran T.R. Redfern P.C. 163, 367, 373 Red'kin V.E. 616, 621, 622, 629				
Petrakovskaya E.A. 236, 417 Rao T.N. 567 Petrov E.A. 027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625 Redfern P.C. 163, 367, 373 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629				
Petrov E.A. 027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 288 209, 450, 451, 608, 614, 620, 625 Redfern P.C. 163, 367, 373 Red'kin V.E. 616, 621, 622, 629				
054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625 Redfern P.C. 163, 367, 373 Red'kin V.E.				
209, 450, 451, 608, 614, Reddy G.L.N. 288 620, 625 Redfern P.C. 163, 367, 373 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629	TOUGH D.M.	054 056 066 171 172	Rayindran T D	
620, 625 Redfern P.C. 163, 367, 373 Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629		209 450 451 608 614		
Petrov Y.I. 037 Red'kin V.E. 616, 621, 622, 629				
	Petrov Y.I			

Author Index			
Ree F.H.	048, 049, 050, 129, 130,	Schnaiter M.	589
	131, 152, 153	Schur M.	522
Rehn L.E.	112, 639	Schwager F.	405
Rellick G.S.	440	Schwartz M.P.	453
Richter V.	359	Segall B.	202, 543
Rigolli P.	495	Seifert G.	539
Ristein J.	238	Sekaric L.	191
Riviere J.P.	521	Seleznev B.	235
Robertson J.	327	Sellgren K.	579
Roddatis V.V.	195, 200, 522	Semjonova L.F.	577, 584, 591, 593
Rogacheva A.I.	017	Sen C.S.	068
Rogov V.V.	418	Sen R.	243, 244
Romain J.P.	505	Senyut' V.T.	263, 427
Romanenko A.I.	232, 233, 485, 531	Sepold G.	386
Romanko L.A.	193, 266, 418	Sergeev S.S.	067
Romanov E.	498	Sergienko V.	443, 472
Romeo M.	541	Serova T.V.	061
Rosman K.J.R. Rotter S.	580 359	Shaichutdinov Sh.K.	079
Roy R.	481	Shaklina I.V.	148 625
Rozenberg G.Kh.	011	Shalyuta V.N.	248
Ruan M.L.	109	Shames A.I. Shamraeva V.S.	089, 273, 414
Rudenko A.P.	028, 096, 172, 251, 382	Shangin A.P.	622
Rudina N.A.	241	Shao L.	237
Rudolph V.	572	Sharda T.	321
Ruoff R.S.	565	Sharma A.K.	378
Russell J.N.	453, 455	Shaw M.S.	002
Russo S.P.	137, 138, 144, 145, 146,	She J.C.	361
	147, 226, 227, 562, 563,	Shefer E.	339
	564, 566	Shein N.V.	261
Rutt K.J.	473	Sheinerman A.G.	498
Ryzhko G.A.	628, 635	Shelohneva L.F.	429, 434
Saburbaev V.Yu.	402	Shenderova O.A.	022, 135, 136, 140, 143,
Safonov Yu.N.	613		565
Saha D.K.	185	Sheromov M.A.	301
Saikaly W.	541	Sheu S.Y.	574, 578
Saito T.	265	Shevchenko V.	126
Sakovich G.V	027, 045, 046, 066, 068,	Shi C.R.	326
	070, 085, 171, 173, 179,	Shi J.R.	362
Sakurai T.	280, 608, 620, 625, 633 529	Shibayama Y. Shintani Y.	490, 496, 499
Salahutdinov N.F.	087	Shiratori Y.	336 514
Salama F.	588	Shitenkov N.V.	633
Salko A.E.	402	Shtein M.S.	068
Samirant M.	026, 072, 076, 103, 303,	Shuh D.K.	305
	546	Shul'man L.A.	019
Samylov S.V.	482	Shulzhenko A.A.	266, 418, 420
Sandford S.A.	598	Sickafus K.E.	526
Sano N.	519, 527	Sidorin Yu.Yu.	613
Sataev P.P.	617, 623, 623, 624, 628,	Siegal M.P.	198, 363
	632, 633, 635, 636, 637,	Sigrist M.	497
	638	Sikder A.K.	288
Sataeva R.R.	317	Siklitsky V.I.	180, 183, 184, 204, 248
Sato H.	201, 283, 486, 488, 489,	Silva S.R.P.	391
	490, 496, 499, 504	Silzars A.	358
Sato Y.	308	Simpson R.L.	363
Savvakin G.I.	015, 118	Sinor T.W.	390
Sawaoka A.B.	099, 107, 057	Sirenko A.V.	075, 315
Schall J.D.	140	Skorohod V.V.	118
Schewe P.F.	044	Skorupa W.	095
Schlapbach L.	285, 364	Skryabin Yu.A.	615
Schlogl R.	195, 200, 522	Skvortsova V.L.	028
Schlueter J.	350	Slavinsky Yu.S.	249

			/ tatiloi iiiqox
Slyusarev S.Ya.	615	Szmidt J.	239
Smagina G.F.	279	Takagi H.	264
Smekhnov A.A.	314	Takai H.	110, 111
Smirnov A.B.	211	Takai K.	486
Smith L.M.	453, 455	Takamatsu Y.	308
Smolianinov A.	604	Takemori T.	210
Smolin A.A.	369, 386, 400 124	Takeo H. Takeuchi Y.	185 514
Smorgonskaya E. Snook I.K.	137, 138, 144, 145, 146,	Tallant D.R.	363
SHOOK I.K.	147, 226, 227, 562, 563,	Tamura H.	107
	564, 566	Tanabe Y.	101, 107
Soga T.	321	Tananaev I.V.	030
Sokolov Yu.P.	411	Tang M.	003
Sokovich G.V.	174	Tao X.	298
Soldatov E.S.	358	Tarasevich B.N.	172
Solohina A.B.	279, 623	Tarasevich M.P.	470
Solonin Y.M.	118	Tarskikh S.V.	454
Song XY.	507	Tatianin Yu.	419
Sosa S.S.	347	Tatsii V.F.	010, 017, 593
Soucy G.	114	Tay B.K.	348, 362
Sozin Yu.I.	182, 187, 190	Taylor K.N.	390
Spear K.E.	116, 117, 120, 121, 122,	Ten K.A.	301 502 506
C	627	Teng M.H.	503, 506 510
Speisser C.	541	Teo K.B.K.	519
Spitsyn B. Srivastava D.	235, 262 234	Terminello L.J. Terukov E.I.	139, 292, 305, 306 220
Standifird J.D.	390	Teslenko A.S.	058
Standing 3.D. Stankus S.V.	133, 202, 544	Tesner P.A.	015
Starchenko I.M.	427	Thune E.	513, 516, 517, 521
Staver A.M.	009, 013, 029, 070, 616,	Tian J.	328
	619, 621, 622, 626, 629	Tielens A.G.G.M.	575, 598
Stavrev S.	642	Timofeyev M.A.	168, 358
Steel E.	003, 005	Titarenko Y.I.	051
Stein B.	044	Titov V.M.	058, 059, 069, 070, 087,
Stel'makh S.	176	PM 1 7737	088, 189, 301, 558, 618
Stepanova A.	235	Tkach V.N.	266, 310
Stepanova N.V.	630	Tkachenko A.P. Tolochko A.P.	257 061
Sternberg M.	141, 311 181	Tolochko B.P.	301
Stesmans A. Stoev K.	642	Tomanek D.	484
Strother T.	453	Tomita S.	512, 518, 529, 530, 532,
Strunk H.P.	342	Tollbia o.	533, 537, 538, 540
Su D.S.	195, 200	Tomita Y.	444
Suetin N.	235, 339, 358	Tong W.	305
Suganuma K.	524	Torbati S.	466
Sugimoto K.	336	Toropov A.D.	257, 423
Suharenko V.I.	061, 075, 104, 315, 436	Tosatti E.	260, 510
Sumant A.	346, 350, 353, 478	Touhara H.	486
Sumathy R.	243, 244	Toyota H.	370
Sun H.P.	094	Trefilov V.I.	015, 118
Sun L.L.	094	Trifonov A.S.	358
Sun X.S.	355	Trusov L.I.	038
Sun Y.N.	333	Tsai MH.	242
Sun Z. Suschev V.G.	348, 362	Tsaplin D.N. Tseng P.K.	056, 062, 077, 086 242
	633 305	Tsubota T.	264 .
Sutherland D.G.J.	151	Tsukuda Y.	530
Suvorov S.A. Suwev V.T.	637	Tsypkina I.M.	410
Suzuki M.	110, 111	Tucek J.	353, 478
Svetlov S.A.	614	Turitsyna O.F.	628
Swain G.M.	351	Tushko Yu.M.	626
Swaoka A.B.	101	Tushko Yu.V.	154
Swiderska-Sroda A.	409	Tushkov Yu.V.	170

Tyler T.	468	Weathers M.S.	004, 132
Tysheckaya A.B.	483	Weber H.P.	176
Ugarte D.	556, 557, 559, 560, 561	Wei B.	097
Urabe K.	264	Weiner B.R.	322, 329
Uvarov S.V.	605	Welz S.	123, 125, 126
Vacik J.	323	Wesolowski P.	551
Valliulova Z.Kh.	168, 278, 389, 392	White E.T.	572
van Buuren T.W. Van Kerckhoven C.	139 575	Wilde G. Winter N.W.	150 129, 152, 153
Van Kerckhoven C. Vander Sande J.B.	534	Witck M.	351
Vasilishin M.S.	614	Withers J.	603
Vasinshin W.S.	304	Withrow S.P.	093, 509
Verchovsky A.B.	577, 584, 591	Wlotzka F.	590
Vereshchagin A.L.	032, 085, 128, 171, 173,	Wolf D.	256
<b>3</b>	175, 179, 261, 307, 407,	Wong M.S.	335
	608, 620	Wouters B.H.	181
Veretennikova M.V.	272, 402, 415	Wright I.P.	591
Verwoerd W.S.	157	Wu CC.	578
Viccelli A.	047	Wu C.J.	048
Viecelli J.A.	049, 050, 129	Wu D.	097
Villafranca Otero A.L.		Wu H.Z.	326
Vishnevskij E.N.	633 421	Wu JJ. Wu K.H.	344 360
Vlasov A.V. Vlasov I.	369, 421, 422	Xabibullin I.G.	611
Vogel P.	587	Xie E.	237
Volk F.	071	Xu H.J.	109
Volkogon V.M.	447	Xu K.	223, 237
Volkov A.P.	241	Xu N.S.	196, 203, 357, 360, 361
Volkov K.V.	063, 065, 084	Xu T.	221, 258, 328
Volokhov A.I.	450, 451	Xu Y.	323
Voloshin M.M.	254	Xub K.	218
Voloshin M.N.	105, 249, 255, 273	Xue L.A.	194
Von Dreele R.	176	Xue Q.	258
Vorobyev V.S.	064 272, 274, 276, 415, 410,	Xue Q.J.	328 370
Voznyakovskii A.P.	411, 429, 431, 434, 438	Yagi H. Yagi I.	567
Vul' A.Ya.	180, 181, 183, 184, 204,	Yakushev V.V.	020
	205, 211, 219, 271, 313,	Yamada K.	057, 099, 101, 107
	393	Yamaguchi S.	016
Vul' S.P.	180, 219	Yamamoto K.	308, 532, 538, 540
Vyskubenko B.A.	061	Yamamoto S.	323, 515, 526
Wacker J.F.	005	Yamamoto Y.	110, 111, 444
Wacker J.G.	003	Yanagishita T.	567
Waelkens C.	575	Yang D.J.	325
Wakabayashi K. Wang B.	487, 497 432	Yang J.R. Yang S.R.	242, 344, 356 328
Wang E.G.	360	Yang T.S.	335
Wang H.	519, 527	Yang W.	455
Wang L.	469	Yara T.	399
Wang N.	355	Yarosh V.V.	186
Wang Q.	325	Yashchenko N.K.	634
Wang S.G.	325	Yasuda H.	533
Wang T.K.	026, 072, 076, 103, 303,	Yasui K.	567
*** ***	546	Yen M.Y.	493
Wang T.Y.	242, 356	Yokogawa K.	500
Wang W.K.	094	Yoon D.	161, 162
Wang WL.	343 381	Yoon S.F. Yoshida N.	325 486
Wang Z. Wang Z.G.	334	Yoshikawa H.	486 337
Wang Z.X.	109	Yoshikawa M.	224, 294, 295, 504
Wanke H.	590	Yoshimura M.	500
Wasserburg G.J.	587	Yu G.Q.	109
Watkins G.D.	384	Yu L.P.	109

Yu YC.	341	Zhirkevich V.Yu.	074, 424
Yu Z.X.	203	Zhirnov V.V.	022, 143, 284, 285, 339,
Yuan J.	116, 117, 120		364, 406, 468
Yuan Y.L.	469	Zhogova K.B.	104
Yun S.	476	Zhou D.	368, 372, 374, 375, 376,
Yun S.R.	286, 289, 395, 536		379, 380
Yur'ev G.S.	175	Zhou G.	053
Yusa H.	569	Zhou Q.	325
Zabusov O.O.	247	Zhou X.	384
Zadorozhnaya L.	235	Zhou X.T.	091, 158, 334
Zagoruiko I.V.	174	Zhu D.Z.	109
Zaiser M.	535, 552	Zhu F.Y.	109
Zakharov A.A.	275, 366, 443, 619, 629	Zhu H.S.	395
Zakharov D.N.	421	Zhu W.	340, 371, 607, 609
Zaldivar R.J.	440	Zhu X.	323
Zalyaliev M.M.	611	Zhuk A.Z.	505
Zapol P.	141, 311, 312, 338, 350,	Zhukov S.G.	220, 422, 435, 437, 604
	367	Zhutaeva G.V.	470
Zelyavskii V.B.	186	Zilberberg I.L.	543
Zhai H.Z.	395	Zinner E.	600
Zhang C.L.	571	Zolotoyabko E.	330
Zhang J.	094, 097		
Zhang J.H.	333		
Zhang M.	094	Zolotuhina I.I.	407
Zhang Q.	325	Zou G.T.	094
Zhang R.Q.	158	Zubkov P.I.	301
Zhang W.J.	355	Zuiker C.D.	292, 299, 305, 383, 385
Zhang X.Y.	094	Zukov S.	369
Zhang Z.	094	Zul'kova T.V.	315
Zhao D.S.	197	Zvonarev E.V.	427
Zhao J.	258 .	Zyulkova T.V.	075
Zhao M.	197		